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Family Practice Residency Training and the Community Health Center

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The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

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WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed:

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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Family Practice Residency Training and the Community Health Center

Loren H. Amundson, M.D.*

ABSTRACT

This paper reviews the community medicine content expected during family practice residency training. A historical review of the development of Community Health Centers is included. It outlines the involvement of a family practice residency program delivering health care and receiving community medicine training in a Community Health Center. The content of this community medicine training is further delineated. It concludes that significant and appropriate community medicine training during a family practice residency can be obtained through affiliation with a Community Health Center.

Family Practice Residency programs are to include community medicine training in their curriculum, but there is little agreement as to what community medicine is or what constitutes appropriate training.[1] Both the Accreditation Council for Graduate Medical Education (ACGME) special requirements for residency training in family practice and the Residency Assistance Program (RAP) criteria speak to this content as being required and absolute.[2, 3]

The language includes descriptive elements such as occupation, health resource agencies, epidemiology, community health education, preventive medicine, environmental health and public health services, in addition to school health and sports medicine, as being within the purview of "community medicine." Structured educational experiences in rural and/or inner city health care should be available to residents if such experiences add a dimension and are not otherwise present in the educational program.

Also, the medical profession and its educational institutions have been urged to take a significant role in learning, teaching and practicing the concepts of community medicine.[4-7]

Community Health Centers

The first neighborhood health centers in America, local clinics satisfying the functions of a family physician for low income groups, date back to the period of 1910-1919 in response to the wave of groups of poor immigrants settling in urban areas. As a result of changes in the economic status of immigrants, new approaches to social welfare, and political antagonism, the movement declined by World War II.[8]

During the late 1960s, the federal government clearly set the tone for health care of the future by reaffirming the right of each and every American to access to quality health care, through Public Law 89-749.[9] Through this legislation they became involved in the development of innovative models in an attempt to improve accessibility and comprehensiveness in the health care delivery system. This federal support provided for grants to public and non-profit private agencies who would help provide services to meet the health needs of people who had not been previously reached. The intent included elimination of inequities in access to and receipt of health care for certain population groups, especially the disadvantaged. Community Health Center development thus represented a portion of an enlarged government role in the financing of health care. Also underlying the philosophy of these centers was the concept intended to insure that each patient be provided with sufficient necessary information to assume a greater share of the responsibility for maintaining their own health status, i.e. patient educa-

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tion. Federal authority for Community Health Centers mandated full community participation to policy making boards. It is now felt that consumer participation in the health care system has been established and will increase because of the positive experiences in the centers. Although the centers were developed on a concept of "free care," patients increasingly have been required to pay for services on a sliding fee schedule basis (Table I).

TABLE I
SIOUX RIVER VALLEY COMMUNITY HEALTH CENTER SLIDING SCALE FEE PAYMENTS

Sliding Scale Payments	*% of Patients Paying Each Fee*
0% (of fee)	32
20%	11
40%	33
60%	8
80%	3
100%	13

The Community Health Centers Program, although much smaller than the overall Medicaid Program in terms of expenditures and users, showed steady increases in the number of people its various projects served — from 1.2 million in 1974 to 4.2 million in 1980.[10] Nine hundred sixty-five (965) Community Health Centers were supported at a cost of $400 million in 1980.[8] Its distribution of revenues suggests that many of its services and the patients it serves are not covered under Medicare and Medicaid; in 1980 about 16 percent of its revenues came from Medicare and Medicaid. Despite the increases in users and encounters between 1974 and 1980, appropriations in constant 1974 dollars were actually less in 1980 than in 1974.[10]

Kark, who coined the term "community-oriented primary care," feels that personal primary care and "community medicine" (organized health actions that address the needs of the community as a whole) need to be joined.[11, 12]

Community Medicine Education

The Sioux Falls Family Practice Residency Program (SFFPRP) (FPR) has defined a program in community medicine to serve its residents and fulfill many of the criteria outlined in the aforementioned guiding documents. This includes required block time of one month during the second year of residency training in addition to a variety of longitudinal experiences throughout the three year residency program, most of these being available during years two and three (Table II).

The keystone of this experience is the Sioux River Valley Community Health Center (SRVCHC) (CHC) in Sioux Falls, an Urban Health Initiative (UHI) project (No. 08-J-000013) funded through the Bureau of Community Health Services Programs, Public Health Service Act, Section 330. This project, sponsored by the Sioux Falls City Health Department, was first funded in October 1977. The residency became involved in October 1981.

TABLE II
SIOUX FALLS FAMILY PRACTICE RESIDENCY PROGRAM
CURRICULUM CONTENT
COMMUNITY MEDICINE

- **I. BLOCK ROTATION**
  - **A. One month, FPII year**
  - **B. Structured:**
    - **1. Includes block rotation experiences at CHC in addition to required experiences with VNA, alcoholism resources, and city/county jail.**
- **II. LONGITUDINAL EXPERIENCES**
  - **A. Nursing Homes**
    - **1. FPC patients assigned**
    - **2. Monthly visits**
  - **B. Public School Physicals**
  - **C. Sioux Vocational School Physicals**
  - **D. Athletics**
    - **1. Pre-season physicals**
    - **2. Athletic event coverage**
  - **E. Community Health Education**
    - **1. Teaching CPR and ACLS courses**
  - **F. Occupational Medicine**
    - **1. Contract care given at FPC**
  - **G. Outreach**
    - **1. Rural Preceptorship**
  - **H. Community Resource Contacts While on Other Rotations**
    - **1. Renal dialysis**
    - **2. Cystic Fibrosis**
- **III. OPTIONAL PROGRAMS**
  - **A. Various**

By contract for services, the FPR provides a Medical Director for this facility who serves as an advisor to the City Board of Health, is a preceptor for a full time CHC employed Family Nurse Practitioner provider, and who directs the health care services provided by family practice residents, the FNP, and family practice residency faculty.

The CHC is located in the same facility as the City Health Department, which contains sections of environmental health and sanitation, animal control, and the city health laboratory, the latter being utilized for ambulatory CHC laboratory services.

Also a part of the facilities, and integrated into the total health care services, are a State Health Department funded communicable disease control section (venereal disease and immunization) and a State Health Department Regional Environmental office. By contract, the FPR also provides medical direction to the Women, Infants, and Children (WIC) Pro-

gram, also located in the same building as the CHC, its Registered Dietician Director being available for nutritional consultation to both the CHC and the FPR.

Medical students from USDSM receive ambulatory training at this facility as a part of third year block clerkships and during elective time in longitudinal ambulatory care. Feedback from their experiences has been positive. In addition, students from two baccalaureate degree nursing programs take electives and do special projects, through contractual agreements, at the CHC. Having a Family Nurse Practitioner on site as a provider allows residents a unique opportunity to provide ambulatory medical care in concert with a physician extender, a medical student and a nursing student. It has been stated that the acceptance and integration of physician assistants into the health care profession is an educational process that should begin during family practice training.[13]

Ambulatory health care services are provided 40 hours per week in a comfortable clinic with seven examining rooms, located nine blocks from the Family Practice Center and located midway between the two Sioux Falls community hospitals, nine blocks from each. The residents provide after hours ER services for CHC patients and handle admissions and hospital care for hospitalized CHC patients.

Weekly random chart review is done by faculty to assess level of care of patients seen by providers. A review of selected clinical services is also done to assess compliance with established grant policies (Table III). Utilization of these reviews to improve patient care have resulted in a new hypertension protocol to help differentiate cases of elevated blood pressure without hypertension from hypertension uncomplicated, both to insure complete workup and compliance and to educate patients and providers. The Family Nurse Practitioner has assumed the role as audit coordinator, organizing and coordinating medical audits for the CHC. In-services are held monthly for CHC staff and personnel, also coordinated by the FNP, and given by the Medical Director, family practice residents, CHC staff, or outside resource personnel. These in-service presentations relate to common problems seen at the CHC.

TABLE III
SIOUX RIVER VALLEY COMMUNITY HEALTH CENTER
BUREAU OF COMMON REPORTING REQUIREMENTS (BCRR)
SELECTED CLINICAL SERVICES

Clinical User Category	Records Sampled (a)	Records in Compliance (b)
1) Immunization 24-27 months		
2) Immunization 6 year olds		
3) Adolescent Family Planning Counseling (under 20 years)		
4) Pap Smear Follow-up		
5) Hypertension Follow-up (10 years and over)		
6) Anemia Screening 24-27 months		

Health care plans, currently under development at the CHC, as part of the UHI grant, include activities in prenatal, pediatric, adolescent, adult, and geriatric segments of the patient population. Examples of activities being studied include the referral mechanism to local hospital OB clinics, an expanded program for care of otitis media, blood pressure patterns in oral contraceptive users, a refined hypertension detection, workup and followup protocol, and a geriatric awareness program to promote users in this age group.

A video player for patient education has recently been purchased and installed in the CHC waiting room. This is used for patient education tapes, including Public Service Announcements (PSAs) produced by a local TV station utilizing family practice residents (a program now in its second year). A video camera has been purchased to develop the facility's own patient education production capabilities. With these additions, the CHC hopes to create a more positive "preventive attitude" in the patient population, although it has been stated that among low-income populations, perceived need for health care is more closely defined as need for illness care while other groups define health services needs in terms of both illness and preventive care.[14]

Clinical research at the CHC is being developed and conducted, the facility having been part of a three-site research project conducted by a faculty member assessing the level of understanding of common medical terms by patients. A prospective study of blood pressure patterns in oral contraceptive users is being developed. A chlamydia culture study (consortium of health care facilities) is in the planning stage.

Computerization is planned for the next fiscal year. Meanwhile, patient problems have been documented using the ICHPPC (PriCare) Coding System. A "super-bill" is in use and will be expanded and redesigned when computer capabilities are in place.

During one calendar year (1982), residents saw 24,697 patients at the FPR, while 8,332 patients were seen at the CHC, for a total of 33,029 visits. 4,229 people made these 8,332 office visits to the CHC, as shown in Table IV. Also during this year, the FPR saw 1,977 ER patients from their residency

TABLE IV
SIOUX RIVER VALLEY COMMUNITY HEALTH CENTER
NUMBER OF USERS BY AGE AND SEX
1982

Age and Sex	Number of Users
Female:	
1) 0-4	341
2) 5-9	214
3) 10-14	119
4) 15-19	759
5) 20-34	1544
6) 35-44	72
7) 45-64	44
8) 65 and over	3
9) SUBTOTAL (Lines 1-8)	3096
Male:	
10) 0-4	334
11) 5-9	215
12) 10-14	100
13) 15-19	86
14) 20-34	330
15) 35-44	45
16) 45-64	18
17) 65 and over	5
18) SUBTOTAL (Lines 10-17)	1133
19) TOTAL (Lines 9+18)	4229

center practice and 197 from the affiliated CHC. 1,102 FPR patients were hospitalized (including OBs) in addition to 47 hospitalizations of CHC patients (no OB). Prenatal patients seen at the CHC are referred to OB Clinics, sponsored and financed by the two community hospitals, for ongoing care and delivery. 117 such referrals were made in 1982. Residents are involved in providing this prenatal and intrapartum care, both by being primary providers as first year residents and serving as teacher consultants during the second and third years of training, working with residency and medical staff faculty. Established CHC patients are returned to the CHC for postpartum and infant care.

Using the PriCare System, 10,708 patient problems were coded during these 8,332 patient visits to the CHC. Table V shows a comparison with the problems seen during a previous study published by the residency program.[15]

The 10 most common problems seen at the CHC are shown in Table VI. The first five of these diagnoses were also in the top 10 in frequency in the previous residency study. In addition to these recorded patient problems, the CHC provided the following additional services; 476 WIC hemoglobins were done and 296 of the communicable disease control (VD) visits did not require being seen by a health care provider. Family planning activities within the patient population at the CHC are shown in Table VII.

An average of 33 patients was seen by providers per clinic day. A 1.9% ambulatory referral rate com-

TABLE V
PATIENT PROBLEMS
RANK-ORDER COMPARISON OF SFFPRP AND SRVCHC STUDIES

PriCare Category	Rank Order* FPR	CHC
I. Infective and Parasitic Diseases	7	5
II. Neoplasms	14	15
III. Endocrine, Nutritional and Metabolic Diseases	10	13
IV. Diseases of Blood and Blood Forming Organs	16	14
V. Mental Disorders	13	12
VI. Diseases of the Nervous System and Sense Organs	6	4
VII. Diseases of the Circulatory System	4	10
VIII. Diseases of the Respiratory System	2	2
IX. Diseases of the Digestive System	9	9
X. Diseases of the Genitourinary System	5	3
XI. Pregnancy, Childbirth, and Puerperium	17	16
XII. Diseases of the Skin and Subcutaneous Tissue	8	6
XIII. Diseases of the Musculoskeletal System and Connective Tissue	11	11
XIV. Congenital Anomalies	15	17
XV. Perinatal Conditions	18	18
XVI. Physical Signs, Symptoms, and Ill-Defined Conditions	12	8
XVII. Accidents, Poisonings, and Violence	3	7
XVIII. Supplementary Classifications	1	1

* The most frequent is indicated by 1, the least frequent by 18

pared favorably with results in an earlier study from this residency program.[16] Twenty-six percent of these referrals were made "within the system," patients being sent to the FPR for procedures and services not available at the CHC. Twenty-three percent of ambulatory referrals were for ENT problems, relating to an incidence of 5.4% of all patient problems being acute purulent otitis media plus acute and chronic serous otitis media. A review of these ear problems has led to:

1. An in-service on otitis media for CHC and FPR nursing personnel.
2. Purchase of an audiometer.
3. Purchase of a Grayson-Stadler tympanometer.
4. A protocol for follow-up of all patients with established ear problems.
5. Appropriate consultation and referral for unresolved ear problems.

In addition to half days at the FPR, resident time in community medicine during the one month block is spent in required and elective community experiences. Required time includes county jail medical

services, Visiting Nurse Association, and alcoholism activities; residents have utilized other available community resources as shown in Table VIII.

TABLE VI
SIOUX RIVER VALLEY COMMUNITY HEALTH CENTER
TEN MOST COMMON PATIENT PROBLEMS
1982

Patient Problems	% of Total Problems
Medical exam (health care maintenance, other)	39
Oral contraceptive request and exam	11
Prophylactic immunization	10
Acute URI	5
Acute otitis media (purulent)	4
Vaginitis, NOS	2.6
Acute tonsillitis, NOS (presumed viral)	1.7
Abnormal urine test, NEC	1.6
Acute and chronic serous otitis media	1.4
Strep throat, culture proven	1.3
% of Total Problems	77.7

TABLE VII
SIOUX RIVER VALLEY COMMUNITY HEALTH CENTER
FAMILY PLANNING ACTIVITIES
1982

Activity	Number of Patient Contacts
Oral Contraceptive Refills (Nurse Only)	1,917
Pap Smear (97 Abnormal)	1,621
Oral Contraceptive Request and Exam	1,182
Diagnosis of Pregnancy (PG Test and Nurse Only)	359
Diagnosis of Pregnancy (Health Care Provider)	124
Other Contraceptive Methods	59
Intrauterine Devices	47
Contraceptive Counseling Only	46
Unplanned Pregnancy Counseling	13

TABLE VIII
SIOUX FALLS FAMILY PRACTICE RESIDENCY PROGRAM
COMMUNITY HEALTH CARE RESOURCES* UTILIZED IN COMMUNITY MEDICINE
1982

Alcoholism	19
Birth Defects	1
Blind & Visually Impaired	6
Blood Pressure	3
Breast Feeding (LaLeche)	1
Cancer	4
Cerebral Palsy	4
Community Blood Bank	1
Counseling	9
Deaf & Hearing Impaired	6
Dental Care/Dentures	3
Diabetes	1
Discharge Planning	6
Domestic Violence	1
Drug Abuse	1
Elderly	1
Family Planning	2
Financial Assistance	1
Genetic Counseling	1
Handicapped	13
Heart Disease	3
Homebound	13
Immunizations	7
Infertility	4
Learning Disabilities	1
Mental Health	6
Mentally Retarded	8
Neglect/Child Abuse	12
Nutrition	2
Ostomy	1
Physical Examinations	5
Poisoning	1
Pregnancy	3
Rabies	1
Respiratory Diseases	1
Senior Citizens	2
Special Education	8
Speech Impaired	1
Tuberculosis	5
Unwanted Pregnancy	2
Venereal Disease	2

* N = 15 FPR II and III on Community Medicine.

Third year residents serve longitudinal, half days weekly (same half day each week) at the CHC, utilizing one of their half day clinic blocks from FPR time. While this volunteer activity extends for a minimum of six months, more often the resident provides this continuity service to CHC patients for the entire year. It has not been difficult to work these longitudinal experiences into other required and elective third year rotations. In addition, one new faculty member, who was recruited from outside the community, sees patients weekly at the CHC, using this patient base to maintain his clinical skills.

The Family Practice Residency subcontracts for some of the CHC provider coverage, utilizing the services of a volunteer family physician to staff the weekly evening clinic and private practice pediatricians to help provide pediatric teaching for residents on-site two half days per week. Part of this teaching is provided by a pediatrician who is now enrolled in the Family Practice Residency and who plays a dual role as faculty in pediatrics.

Conclusions

It would appear that both public and private provider systems may be essential, and that they need not compete; they can provide mutual reinforcement for achieving universal and equitable health services in the public interest.[17] The federal government has demonstrated a commitment to properly fund and

include Community Health Centers as an integral part of the health care delivery system. If one places CHCs alongside the range of innovations designed to improve the human condition in the several decades since community health centers were "invented," they represent a truly remarkable initiative. Programmatically, the evidence points to their utility for delivering health services to the community members of marginal personal resources and limited health-care-resource options; wisdom suggests their continued support.[18]

The Sioux Falls Family Practice Residency Program is able to offer clinical community medicine training to its residents through participation in patient care and other activities offered by the Sioux River Valley Community Health Center. Together we can do better.

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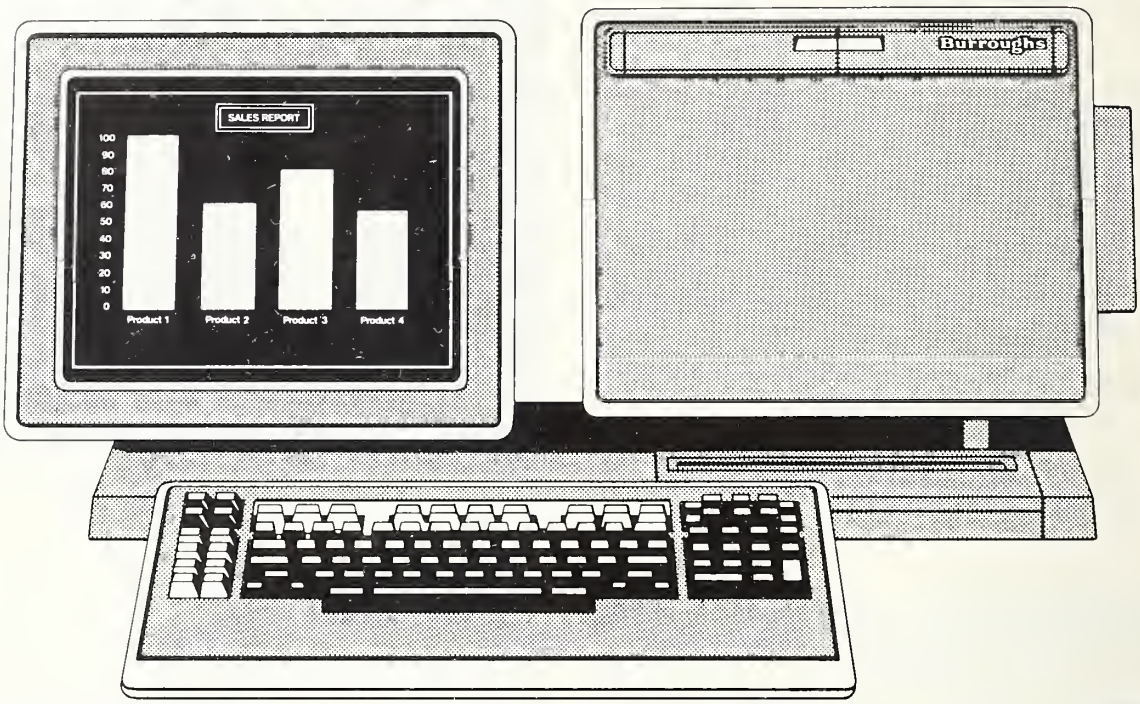

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Sixty Year Old Caucasian Female With Nasal Congestion and Abnormal Chest X-ray

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Discussers

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Editor

Case # 1050594 (84-2378)

This 60 year old Caucasian female was admitted to Sioux Valley Hospital because of nasal congestion and an abnormal chest x-ray.

Approximately 6 months prior to admission the patient noted persistent nasal congestion and a chronic dry nonproductive cough. At that time a complete physical examination including a pelvic examination, Papanicolaou smear, 12 panel chemistry examination and screening mammography showed no abnormalities. The nasal congestion gradually became worse and was interspersed with upper respiratory tract infections over the next several months. There was no definite dyspnea on exertion but the cough became progressively worse but continued to be generally nonproductive and without hemoptysis. In the morning she would produce a small amount of thick greenish phlegm after vigorous coughing. There was no anorexia or weight loss. She saw a specialist in ear, nose and throat, because of nasal congestion and epistaxis. An area in the nose was cauterized.

Three months prior to admission she developed pain in the left ear and was noted to have a perforation of the ear drum.

Past history revealed removal of a benign bone tumor from the shoulder five years prior to admission and four breast biopsies all of which were for benign disease over the previous several years.

The patient had lived in southern California and Arizona some years previously and had one sister with some "spots" on the lung which were being followed but no diagnosis had been made. Serial chest x-rays apparently had been stable. Review of systems was otherwise unremarkable.

PHYSICAL EXAMINATION: Robust woman, temperature 37°C, pulse 80/minute and regular, blood pressure 130 systolic and 72 diastolic, height 5 feet 11½ (181 cm) inches, weight 85 kg. Examination of the head and neck revealed a markedly retracted and chronically scarred left ear drum; there were upper and lower dentures; the nasal mucosa looked normal. Examination of the chest showed a few dry rales in both bases. The heart was not enlarged and had a regular rhythm with no murmurs. There were no abnormalities of the breasts. The abdomen revealed no palpable organs, masses or tenderness. Examination of the extremities including pulses was within normal limits. Chest x-rays from outside revealed a 5 cm in diameter cystic lesion in the right lower lobe with a central single density and solid lesions in the right upper lobe and left lower lobe. (Fig. 1).

LABORATORY DATA: Urinalysis yellow, turbid, specific gravity 1.018, pH 5.0, negative for protein, glucose, ketones, bilirubin, hemoglobin; sediment 0-1, leukocytes per high power field. Admission hemoglobin 12.1 gm/dl, hematocrit 39 vol/dl with normal red cell indices; total leukocyte count 11.4 $\times$ 10^9/L with a differential of 78% segmented neutrophils, 3% neutrophilic bands, 16% lymphocytes, and 3% monocytes. A platelet count was 418 $\times$ 10^9/L. An erythrocyte sedimentation rate was 76 mm per hour. A fluorescent antinuclear antibody test (FANA) was negative. Lactate dehydrogenase (LD), aspartate aminotransferase (SGOT, AST), total bilirubin, total protein, calcium, phosphorus, glucose, blood urea nitrogen, creatinine, uric acid and cholesterol were within normal limits; alkaline phosphatase was 248 IU/L (normal 0-115 IU/L), total protein 6.6 gms/dl with albumin 3.7 gms/dl, alpha I globulin 0.7 gms/dl (slightly elevated). Beta globulin 0.7 gms/dl, gamma globulins 0.5 gms/dl (slightly decreased). A test for carcinoembryonic antigen (CEA) was negative; three stools for occult blood were negative. Immunodiffusion tests for Histoplasma cap-

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sulatum, Blastomyces dermatitidis, Coccidioides immitis, Aspergillus, and Candida were negative. Cultures of sputum for fungal, mycobacterial and routine aerobic and anaerobic pathogens were negative. A computer tomographic scan (CT) of the abdomen showed a 5 cm round mass behind the bladder and cholelithiasis. A chest film showed multiple nodular densities in both lungs of different sizes. (Fig. 1). A large nodule at the right base with cavitation and a mural nodule was noted. There was no free fluid. X-rays of the sinus reveal mucosal thickening in the left nose and sinus. A nasal biopsy showed nonspecific chronic inflammation. An open lung biopsy was performed.

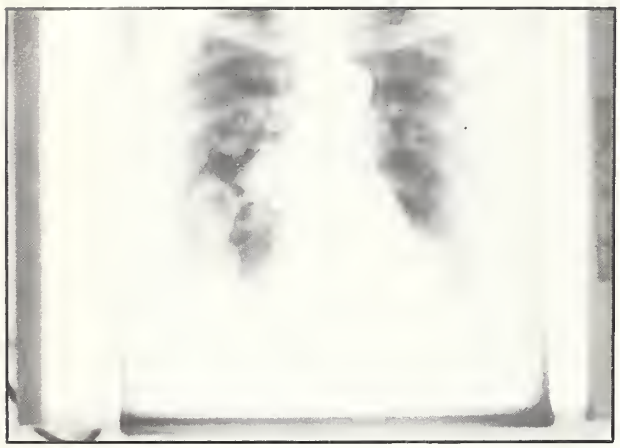

Figure 1
Chest film showing solid and cavitated nodule in right lung and nodule overlaying heart border.

DR. LINDQUIST: The noteable features of this history and physical examination are as follows:

1. **History —**
   A. Persistent nasal congestion
   B. Chronic dry cough
   C. Frequent upper respiratory infections
   D. Left ear pain with tympanic membrane perforation
2. **Physical examination**
   A. Retracted chronically scarred tympanic membrane
   B. Chest x-ray changes as described
   C. Five cm mass behind the bladder on CT scan
   D. Nasal biopsy showing chronic non-specific inflammation
   E. Sinus x-rays showing left sided mucosal thickening

The most alarming feature of this history and physical examination is the x-ray change. Because of these changes, a lung biopsy was performed.

Diseases of the lung presenting with multinodular and cavitary lesions on the chest x-ray can be divided into three large categories:

1. Infectious
2. Malignant
3. Inflammatory

Infectious diseases which present with nodular or granulomatous lesions on a chest x-ray include tuberculosis, histoplasmosis, blastomycosis, coccidioidomycosis, aspergillosis and candidiasis. In this case immunodiffusion tests for Histoplasma capsulatum, Blastomyces dermatitidis, Coccidioides immitis, Aspergillus, and Candida were negative. The reliability of these immunodiffusion tests is fairly good; however, I am not aware of a really satisfactory one specifically for Blastomycoides dermatitidis. There is a complement fixation test for blastomycosis but this has a 50% false negative rate. The patient does have a suggestive history for coccidioidomycosis because she had lived in southern California and Arizona. In addition, cultures of the sputum for fungal, mycobacterial and routine aerobic and anaerobic pathogens were negative. Her white count was 11.4×10^9/L with 78% segmented neutrophils, 3% neutrophilic bands and 16% lymphocytes. This is not suggestive of an acute infection.

Certainly **malignant disease** can cause numerous different chest x-ray pictures ranging from a solitary pulmonary nodule to multiple pulmonary lesions. Bronchogenic carcinoma often presents with a cough with only small amounts of sputum at times. Frequently there is hemoptysis or dyspnea. It can also present with pain, wheezing, weight loss, fever and chills.

Specifically, two sub-groups of bronchogenic carcinoma present with multiple pulmonary nodules. **Epidermoid carcinoma** is characterized by hilar, peri-hilar or peripheral nodules. These nodules have a 7% cavitation rate and the cavitation may occur in either central or peripheral nodules. **Bronchioloalveolar cell** carcinoma may present with multiple nodules with radiolucencies present within the nodules. This type of cancer is distinguished by fairly diffuse margins as opposed to the sharp margin nodules of other granulomatous diseases.

Malignant lymphomas are a consideration, especially in this age group. The most common age range for discovery of a malignant non-Hodgkin's lymphoma is between 40-60 years old. However, a frequent sign of malignant lymphomas is peripheral lymphadenopathy. Chest lymphadenopathy is less common in non-Hodgkin's lymphoma than in Hodgkin's disease. Lymphadenopathy was absent in this case.

Metastatic malignancies may present with either single or multiple lesions on chest x-ray. Malignancies commonly associated with multiple nodular lesions include those of breast, stomach, pancreas,

bone, thyroid and endometrium. Most metastatic malignancies are found to be adenocarcinoma and present on x-ray as spherical bilateral masses of varying sizes. This is a consideration in this woman because of the 5 cm mass located behind the bladder but genitourinary tract malignancy has less commonly been associated with multiple chest nodules.

We have no evidence for a primary malignant neoplasm. It is not mentioned whether this patient has a smoking history. She denied any dyspnea and had no hemoptysis or sputum production. She had no anorexia or weight loss. She does have a history of removal of several benign tumors from bone and breast. The laboratory shows no specific signs of malignancy, other than an elevated alkaline phosphatase at 248 international units/liter. The normal is 0-115. A CEA (carcino-embryonic-antigen test) was negative as were three stools for occult blood.

The final category of lung disease is **inflammatory.** Several systemic and localized diseases of an inflammatory nature can present with multiple pulmonary nodules, some with cavitation.

Caplan's Syndrome is a syndrome of rheumatoid arthritis associated with a pneumoconiosis characterized by multiple spherical pulmonary nodules 0.5 to 5 cm in diameter. Twenty percent of these patients will show no clinical signs of rheumatoid arthritis. The lesions may, at times, cavitate.

Hypersensitivity pneumonitis occasionally appears with such nodules on chest x-ray, especially in the upper lobes in farmer's lung disease. However, usually, the nodules are miliary in nature. There is no history mentioned of farmer's lung or other exposure to pigeon droppings or employment in hog barns where dust with agents causing hypersensitivity pneumonitis could be inhaled.

Allergic angiitis and granulomatosis appears especially in females, however, the clinical picture most often involves severe asthmatic attacks with pulmonary infiltrates which are sometimes interstitial. Eosinophilia, not present in this case, is also prominent in this disorder.

I would like to spend more time on the last two possible entities as they seem to be quite consistent with this patient's disorder.

Wegener's Granulomatosis (WG) is a disorder characterized by necrotizing vasculitis and granulomas of the upper and lower respiratory tract and arteritis of the kidneys. However, any organ in the body may be involved. The majority of the patients with this illness do have renal involvement and generalized arteritis.

The cause of the granulomatosis is unknown but theories speculate that this may be a hypersensitivity reaction. Immune complexes have been found circulating in the serum of patients with this illness and they have also been found on the cells of patients. Other speculations suggest a cellular immune response. Pathologically, one sees granulomas and necrotizing vasculitis. Both entities must be present to make the diagnosis. Most often involved organs include the sinuses, lungs, skin and kidneys. The pathologic picture in the kidney is often a focal and segmental glomerulonephritis.

Clinically, WG can present at any time between the 1st and 8th decades, but the mean age of onset is 40 years. Males are twice as likely to be affected as females. Often the first manifestations are found in the upper and lower respiratory tracts and consist of headaches, sinusitis, otitis media, hearing loss and rhinitis. Fever, joint pain and anorexia may also be seen. Cough, chest pain and hemoptysis are often present. Ten percent of patients will have renal failure. The sinuses are affected in greater than 90% of all patients. Occasionally a saddle nose deformity is seen because of the chronic sinus and nasal inflammation.

The chest x-ray often suggests pneumonia. Occasionally a pneumothorax is seen. Nodular and cavitary infiltrates are very typical. These infiltrates may at times disappear during the course of the illness. Evidence of renal involvement is necessary for the diagnosis of generalized WG. The urine shows a picture of acute glomerulonephritis in some patients while others may show evidence of nephrotic syndrome. Ten percent of patients have progressive renal disease and crescents may be seen in the glomeruli, often a sign of rapidly progressive disease.

Fifty percent of affected patients with WG have eye involvement including iritis, scleritis, conjunctivitis and occasionally proptosis. Thirty-three percent will have coronary arteritis or pericarditis. Twenty-five percent have evidence of a mononeuritis multiplex or cranial neuritis. Fifty percent will have petechiae, vesicles and skin ulcerations as dermatologic manifestations.

Laboratory abnormalities include a normochromic normocytic anemia in some patients. Ten percent of patients will have thrombocytosis. An elevated erythrocyte sedimentation rate (ESR) is present in most patients and the ESR may be used to follow response to treatment. Fifty percent of patients have a positive rheumatoid factor in the serum. Many have increases in serum IGA.

The differential diagnosis of this illness includes tuberculosis, fungal infections and sarcoidosis. However, in all of these diseases, there is no vasculitis present. Systemic lupus erythematosus and polyarteritis nodosa may present a similar picture, however, granulomas are not present.

Because WG can present with hemoptysis and

renal failure, Goodpasture's Syndrome must be considered initially; however, lung biopsy results will easily differentiate WG from this entity.

One other disease which deserves mention is **lymphomatoid granulomatosis (LG).** This disease is characterized by an infiltration of various sized vessels in the body with atypical lymphoid and plasmacytoid cells and a granulomatous reaction. LG usually affects the lungs, skin, central nervous system and kidneys. Nodular or granulomatous lesions appear on chest x-ray and may show signs of cavitation similar to WG. Thirteen to fifty percent of patients with this illness develop lymphoproliferative diseases and there is a suggestion that LG may be a precursor to malignant lymphoma. LG can be differentiated from WG by the characteristic cellular infiltrate on biopsy sections.

Dr. Lindquist's Diagnosis Wegener's Granulomatosis Without Renal Involvement

DR. BARLOW: The first biopsy was from the nose and showed an active chronic and acute inflammatory reaction with fibrosis and erosion of the nasal cartilage. An occasional foreign body type giant cell was seen (Fig. 2) but the reaction was nonspecific and did not suggest the type of granulomatous process seen in the tuberculosis or mycotic disease. The lung biopsy was composed of a 6 x 3.5 cm wedge which contained a single 2.5 cm in greatest dimension oval well demarcated white nodule with irregular yellow necrosis. Microscopically there was irregular eosinophilic necrosis surrounded by a zone of fibrosis and chronic inflammation. Vessels with inflammation in the wall at the periphery of the mass could be seen leading into the necrotic center of the mass (Fig. 3). Thus, the lesion could be described as both angiocentric and angionecrotic. Special stains and cultures of the lesion for mycobacteria and fungi were negative. The nonspecific but characteristic nose and pulmonary inflammatory process together with the clinical picture are certainly highly consistent with a diagnosis of WG.

Figure 2
A giant cell as part of acute and chronic inflammatory infiltrate eroding cartilage of nose.

Figure 3
Medium sized artery with inflammatory cells in wall before entering central area of necrosis.

FINAL ANATOMIC DIAGNOSIS WEGENER'S GRANULOMATOSIS

WG is a clinicopathologic entity, which requires the presence of a characteristic triad of necrotizing granulomatous inflammation with vasculitis of the upper and lower respiratory tracts, glomerulonephritis and variable degrees of small vessel vasculitis for diagnosis. It was first reported by Klinger in 1931 but Wegener's two publications in 1936 and 1939 made it a distinct entity. Although it is an uncommon and of unknown etiology, diagnosis is very important since there is an excellent response to chemotherapy ie cyclophosphamide with or without corticosteroids. Without such therapy, fatality is inevitable. The diagnosis is made on the basis of both the clinical picture and pathologic appearance. Both are characteristic but neither is diagnostic alone. It is also important to rule infectious granulomatous disease particularly in the lung tissue by performing cultures and special stains.

DR. HURLEY: One of the keys in making the diagnosis in this case is the history. The patients sinusitis was actually present for two years and was characterized by bloody and purulent discharge which was unresponsive to antibiotics. What is more, she developed otitis with ear drainage and perforation of the tympanic membrane. There was

no apparent explanation for these findings. When the chest x-ray showed the classic nodules with and without cavitation we immediately suspected WG. However, the patient had a computer tomographic scan (CT) of the abdomen which showed a mass possibly in one ovary. We, therefore, wondered whether the lung picture could not be due to metastatic carcinoma. We hoped by biopsing the nasal lesion first that we would get a characteristic picture and be able to diagnose WG. However, since the picture in the nose was not diagnostic, we turned our attention next to the chest lesions. Septic emboli with infarction was also considered as a cause of these chest nodules. We felt that an open lung biopsy was necessary to obtain tissue for a definitive diagnosis.

* DR. HUMPHREYS: The patient had minimal systemic signs of infection so it was important to rule out fungus disease. The serologic tests for fungus do not completely exclude the disease when they are negative. Therefore, open tissue biopsy was necessary. The patient did not have fever which is often seen in WG. The lack of eosinophilia tended to make a diagnosis of coccidioidomycosis less likely. A confusing part of the history was that the sister had lung disease as well. This certainly could have suggested an infectious ideology. Another interesting feature was that the patient told us that she had an animal laboratory directly above her office. We were concerned that she might have inhaled an infectious agent from this source.

DR. REED: I certainly agree that early and definitive diagnosis is important in this disease. There are two types of agents used in therapy. One is prednisone and the other is cyclophosphamide. The latter is my choice as I feel patients with WG achieve complete remission more often with this agent.

The patient has had considerable improvement with shrinkage of the lung nodules. She has not developed any renal impairment at this time and urinalyses remain free of significant findings. I am still concerned about the patient's abdominal lesion. I plan to repeat the CT scan of the abdomen to determine what has happened to the lesion described originally in the ovary. If this lesion showed marked shrinkage it could well be due to involvement by granuloma or vasculitis. I would think this would be quite an unusual site.

DR. BARLOW: I agree.

† DR. W. O. ROSSING: Could this chest film be due to aspergillosis?

DR. HURLEY: Yes, I think it could be but the patient had no underlying disease such as cavities to produce a fungus ball and was not immunocompromised as is often seen in disseminated aspergillosis.

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Establishing Patient Rapport and Communication

Loren Jarratt, Ed.D.*
Wesley Nord, M.D.†

ABSTRACT

Physician-patient rapport is necessary to proper diagnosis by the physician, and to compliance with treatment program by the patient. Communication is vital to this rapport. Some factors and problems in communication between physician and patient are reviewed, with suggestions for improvement. When a patient rebels or is non-compliant, there is as much blame on the physician as the patient.

INTRODUCTION

This brief review of the literature addresses some aspects of 1) physician/patient communication, 2) factors involved in such communication, and 3) suggestions to improve it.

Communication is the exchange of verbal or nonverbal information between individuals. Hopefully communication leads to improved rapport and understanding, and to increased patient compliance. These topics are appropriate to Family Practice Residency Programs, and to physicians in practice.

Cunningham in a 1981 article,[1] stressed the importance of communication to good patient care, and the importance of trust to good communication. He also recognized the difficulty of reaching the goals of good communication and trust because of contemporary environmental and technological issues.

Sanson-Fisher & Maguire[2] wrote that medical students need formal training in communication skills. Such skills include: "obtaining a history, conveying information about diagnosis and treatment, reassuring patients, achieving patients compliance and satisfaction, and monitoring how patients and relatives adapt to illness and treatment."

Cline[3] stressed communication, stating "Ineffective, rather than effective, communication is the unaffordable luxury." Rakel[4] stated that even a skilled physician will be limited in effectiveness if he/she cannot develop rapport and motivate the patient. Factors involved in establishing rapport include communication skills that instill confidence and trust, and convey sincerity, interest, understanding and compassion.

Since compliance and cure are the end products toward which physicians strive, we are concerned about the many factors which influence compliance. Ley[5] suggested that physicians should look at the individual situation for causes of non-compliance. Poor communication is one potential source of poor compliance.

FACTORS AND PROBLEMS INVOLVED IN COMMUNICATION

A. Interaction Studies

Korsch and Negrete[6] reported a study conducted at the Childrens Hospital of Los Angeles to assess the interaction of the patient and the doctor. The study included 800 clinic visits in which the mother of a sick child was questioned

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about her feelings toward the physician and her satisfaction after the patient visit.

Nearly 20% felt they had not received a clear statement of what was wrong with their baby, and almost half wondered what had caused the illness. In general, mothers tended to blame themselves for the occurrance of illness in the babies and therefore needed reassurance from the doctor.

The most common complaint was that the physician showed little interest in what specifically concerned a mother about her child. Frequently the mother was dismayed by the physician's seeming total disregard of her reason for worrying about the child. Of the mothers questioned, 26% did not mention their chief concern to the doctor because of lack of encouragement or opportunity.

The attitude of the physician toward the mother herself counted most in the mother's degree of satisfaction; physician friendliness toward the child had only slight influence. Of the mothers who were highly satisfied, 53.4% were completely cooperative with the physician's advice, while only 16.7% of the highly dissatisfied mothers were cooperative. There was no correlation between time (length of session) and the mothers' satisfaction or understanding of the diagnosis. Most mothers left the clinic unenlightened as to the nature of their children's illnesses.

Other studies have looked at the relationship between physician and the child, although there is a significant void in available data. Some studies suggest a decrease in surgical complications when good communication with children took place before surgery. Other studies indicate the interest of children in clinical information and their ability to retain some such information better than adults.

A study by Pantell, Stewart, Dias, Wells & Ross[7] at the Family Medicine Center at the University of South Carolina looked at communication between physician and child. Involved in the study were 49 physicians and 115 patient visits. Each visit included an adult, a child and a doctor. On the average, 45.5% of the communication was between doctor and child. When conversing with the child, the doctors expressed more statements directed toward the physical examination, reassurances, current history, and social conversation. Directed to the parent was information about the patient's problems and related family illness problems. There was more communication between doctors and boys than with girls. Doctors relied on children for information, but gave diagnosis and management back to parents on about a three to one ratio. Children became more involved as they became older. Male parents and male children were given more information about the nature and management of the problem than was given to female parents or female children.

B. Problem Areas

There are many problems which lead to less than ideal patient/physician sessions. A good first impression is very important. After a bad start, it may be difficult to change that impression. Another problem is the balance between time pressures and quality personal care. Patients will usually accept a postponement if the problem is recognized by the physician and a management plan is contracted. When patient and physician are from different socioculture backgrounds, prejudicial attitudes may be created. These should be recognized and dealt with.

Other problems occur when the visit involves either the young or the elderly. If there is poor rapport between a parent and the physician, a child may sense this and react accordingly. The physician should relate to the adolescent as a person. Initial contact may include parents, but consider conducting the physical examination and interview with only the physician and patient present. Some elderly people need special understanding and attention because of disability, withdrawal, etc., but avoid assuming that most elderly are different than other patients.

Anstett[8] reevaluated the physician-patient relationship and its effect on the difficult patient. Failed relationships are caused by the physician not recognizing the expectations and needs of a patient, failure to recognize the symbolic and personal aspects of the patient's illness, and failure of communication between the patient and the physician. Often the difficult patient is the result of such an unsatisfactory relationship. Patients may feel they do not have the right to share personal feelings, or to question the physician. Physicians may see the disease as the only problem; they may be short of time, or they may not feel competent dealing with other issues. Physicians need "to treat the whole patient." This includes sensing what the patient needs; an awareness of the mechanisms used in dealing with illness, and an awareness of the patient's attitude and ability to comprehend what the physician is saying.

Additional communication problems are created by the power differential between physicians and patients, and by the threat of evalua-

tion. The power differential is created by the patient yielding responsibility to the physician. The patient tends to become passive while the physician's enhanced power causes him or her to look at patients as objects for manipulation and of little intrinsic value. The patients' health is being questioned, which causes a defensive reaction; the physician then reacts to patient defensiveness, and communication is impaired.[3]

C. Physician's Attitudes

Cline[3] wrote that the patient holds the major responsibility for giving information, but that the physician's communication skills can be used in encouraging the patient openness.

Rakel[4] gave an opposite view, stating that the greatest difficulty in the establishment of patient rapport is the attitude of the physician. If the physician exhibits concern, kindness, respect and understanding, the patient will forgive many shortcomings. Rakel suggested that residents seek to understand themselves, their values, personality and behavior. Often it is lack of a sense of security rather than an excess of security, that causes a physician to appear to be aloof. Generally, the secure physician seeks assistance from colleagues, and establishes close relationships with patients.

Superior doctors are aware of how little they know. Arrogance enters when a doctor fails to admit or recognize how little information he or she may have. If the physician is to be effective in helping patients who are self-limited or beyond medical capabilities, the patient must believe in the doctor and have confidence and trust. The physician should list alternative plans, pros and cons, and then recommend a course of action.

To blame the patient for failure of compliance is a form of arrogance. If the patient rebels, there is as much blame on the physician as the patient. If a doctor's paternalism is intensified by vanity, a lack of empathy, and insolence, the care he provides may be nullified.[9]

D. Physician Interview Studies

A limited study involving 11 physicians and 29 first time patients, reported by Smith, Polis and Hadac,[10] examined physician interview characteristics and the relationship to patient comprehension and satisfaction. High patient satisfaction correlated with increased physician-to-patient information, discussions of prevention, longer interviews, and shorter in room chart review time. Increased patient comprehension correlated with close physical proximity, reduced chart review time and increased time spent in giving opinion and information. Table I lists the correlations between selected interview characteristics and patient satisfaction and understanding.

Table I
Correlations Between Selected Interview Characteristics and Patient Satisfaction and Understanding in the Initial Medical Interview
N = 29

	Satisfaction	Understanding
PHYSICIAN VERBAL BEHAVIOR		
Casual Conversation	(−).108	.085
Providing Reassurance	(−).163	.190
Showing Agreement	(−).159	.254
Giving Suggestions	(−).022	(−).128
Giving Opinions	.025	.343*
Giving Information	.476†	.348*
Asking for Information	(−).261	(−).211
Asking for Opinions	.187	.123
OTHER INTERVIEW VARIABLES		
Length of Interview	.579t	.223
Time Spent Within 3 Feet of Patient	.195	.338*
Time Spent Discussion Prevention	.528†	.251
Time Spent Reading Patient's Chart	(−).688t	(−).341

* Significant at .05 level
† Significant at .005 level
t Significant at .001 level
N = Number

Excessive time spent by doctors in reading the chart might have been viewed unfavorably by the patients because it interfered with eye contact and communication. The negative correlation between suggestions by the physician and patient satisfaction/understanding was a surprise. Simply physician suggestions were strongly related to patient satisfaction: however, when the suggestions were dogmatic, and given in an authoritarian way, they had a negative effect. Premature, superficial reassurance, viewed by patients as insincere or patronizing, also could have accounted for the negative correlation of patient satisfaction in relationship to physician reassurance.[10]

Sanson-Fisher and Maguire[2] reported upon interviews between physicians and patients with breast disease. In only 5% of the cases did the physician pursue the emotional distress of the patient as it was revealed through verbal and nonverbal cues. Observers who evaluated the communication between junior staff physicians and patients noted their doctors ascertained only 1.51 cues/consultation, while trained observers noted 2.45 cues/consultation. It was also found

that those physicians who a) used open-ended questions at the beginning of the consultation, b) clarified cues, and c) had empathy, were more skillful in identifying patients with psychological problems.

Before a patient can follow directions, need exists for that patient's understanding, and recall. Use of clear, simple language by the doctor, repetition, organization of materials into categories, specific recommendations, and the presentation of significant information first are items which improve patient recall.

Compliance is likely to increase as the physician provides information, talks of topics other than medical ones, corrects misconceptions held by the patient, and is friendly.

Some physicians attempt to justify not giving patients information saying that even though a patient says he/she wants information, after it is furnished the perception changes. However, one study indicated 91% wanted to know anticipated symptoms, 97% treatment, and 88% the prognosis. Compared with a group given minimal information, the better informed group was the more satisfied.[2]

SUGGESTIONS FOR IMPROVEMENT

A. Factors Facilitating Patient Satisfaction

Baker and Cassatta, in the text, *PRINCIPLES AND PRACTICE*,[9] confirmed that several factors facilitate patient satisfaction and patient-physician relationship development. These factors are:

1. Psychosocial inquiry, and pertinent history questions, e.g.: "How are things at home?" "Enjoying your job?" "How is your marriage?" These are questions which enhance patient satisfaction.
2. Physical Examination; i.e., "The laying on of hands," has therapeutic value.
3. Testing: Laboratory tests are reassuring to the patient.
4. Explanation and Education: Information from doctor to patient gives an impression of respect and concern.
5. Social Conversation; i.e., Nonmedical mutual interest conversation enhances patient satisfaction.
6. Focus upon quality of time, rather than quantity of time. Those physicians considered best at ambulatory care are those able to focus intensely on the patient.
7. Managing Self-other-Directed Patients: "Field independent" or self-directed patients are introverted, self-reliant and unemotional. They are more stoic, reserved and suspicious. Compliance depends on satisfying their need to be involved in management decisions, and to understand the reasons for the decision. "Field dependent" or "other-directed" patients assume the role of patient more easily. They may be viewed as over-utilizers. The physician may need to urge greater self-responsibility.

Oliver Wendell Holmes is credited with the following quote about effective physicians: — "speak softly, be well-dressed, have quiet ways and have eyes that do not wander."[4]

Rakel[4] wrote that "the secret of the care of the patient is in caring for the patient." Caring involves listening to, considering and taking seriously the patient and what he/she says. (p 107)

Additional aspects of caring are:

1. A good bedside manner is demonstrated by compassion, interest and thoroughness.
2. Caring is empathy, not sympathy.
3. Humanism preserves personal dignity.
4. An unknown French author said, "to cure sometimes, to relieve often, to comfort always." (p 110)

B. Communication Techniques

"The history is the most important factor in diagnostic medicine."[4] (p 113) Medical students and residents have been taught that history precedes diagnosis, and diagnosis precedes treatment: however, history is enhanced by effective communication. Some useful communication techniques for consideration are:

1. Call the patient by name and shake his hand.
2. Begin the conversation with a personal interest topic, a compliment, or talk about the weather.
3. Maintain eye contact.
4. Use appropriate touching.
5. Talk "with" not "to" the patient.
6. Use vocabulary that is easy and accurate.
7. An attentive body position shows interest and concern.
8. Listen carefully: The patient's parting phrase may be a clue to the visit.
9. Emphasize listening.[4]

C. Communication Suggestions for Physicians

History Taking

1. Open-ended questions; e.g., "Tell me how you are responding to the treatment"? Help to stimulate more complete and meaningful responses, allow the doctor to understand how the patient organizes thoughts, and

allow patients to tell what is important to them.
2. Use of silence also stimulates longer responses by creating an uncomfortable situation for the patient.
3. Listen to what the patient has to say.
4. Use terminology that is understandable to the patient.
5. Don't use the question "why?" with patients. This word will tend to make patients defensive. Do use phrases like: How did this happen? When did this happen?, etc.
6. Rather than guess at the reaction of a patient, use perception checking to see if you really understand; i.e., "Is this what you mean?" "It seems that you are feeling angry, etc."
7. Read the chart before you see the patient to increase patient satisfaction and understanding by being able to concentrate on the patient during the visit.

Examination

1. Home visits can provide information about patients' personality, reactions, etc. due to family interactions.
2. Observe the patients' body language and look for nonverbal clues as to how you are relating to the patient. Most body movements have meaning, although care must be exercised in interpretation according to the overall situation, behavior patterns, personality and culture of the patient.

Assessment

1. Don't use a hasty, premature diagnosis — this may create anxiety, and if you are wrong, it will decrease the patients' faith in your judgement.

Plan

1. Nonsupportive family attitudes can negate treatment by a physician.
2. Consider what you can say and do to educate the patient, in order to increase patient satisfaction.
3. Consider asking the patient if there are any questions at the end of the appointment. This is one way to see if your instructions are understood.
4. With the patient who may not want to follow directions, involve him or her in the decision, state a verbal commitment, or write a contract. If you have time to follow-up on such patients, it may insure a higher rate of success.
5. Be open and honest in giving information and opinions, to increase patient satisfaction and understanding.

Overall Visit

1. Consider spending quality time with a patient early on in the patient/physician relationship to establish rapport. Later, after developing a trusting relationship, you may decrease time with the patient, although still maintaining rapport.
2. Spend time in close proximity to the patient, to increase patient understanding.
3. Treat patients with respect, consideration and understanding.
4. Don't talk down to any patient, especially a teenager.
5. Patients will tend to react and respond the way you act and respond to them. They generally will react to anger with anger, to joy with joy.
6. Consider your own philosophy and values, and how you want your patient to perceive you as a professional: develop a behavior which is consistent with those ideals.

The words of Norman Cousins[12] are most appropriate as an overview of the importance of those values of a physician which determine communication between patient/physician: "I pray that, even as he attaches the highest value to his science, the physician will never forget that it works best when combined with his art and, indeed, that the art is what is most enduring in the profession. For ultimately, it is the physician's respect for the human soul that determines the worth of his science."

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HRSA ADMINISTRATOR PREDICTS IMMINENT HEALTH CARE CHANGES

Imminent changes in health care "as profound as any we've seen in this century" hold equal potential for gain or loss, according to Dr. Robert Graham, administrator of the Health Resources and Services Administration.

Addressing the Annual Spring Conference of the Society of Teachers of Family Medicine in Orlando, Fla., Dr. Graham, a family physician, said, "If we [in family practice] cannot function, others will."

Changes in health care that will occur in the next 15 years, he said, arise primarily out of four conditions:

- increasing physician supply ("the single most profound change"),
- new payment/reimbursement patterns,
- increased corporatism and
- a return to viewing health care for all as a moral obligation rather than a right.

"Nothing we can do now will change the fact that there will be a 30 to 40 percent increase in the number of doctors we have today," Dr. Graham said. "The stream of oversupply is around our ankles now; it will soon be up to our Adam's apples and rising. Even family practice will saturate at some point."

Oversupply will have both negative and positive results: Although competition will increase and there could be physician unemployment, medical care will be widely available. Nontraditional practice modes will proliferate.

Expanding on the second causative factor, changing payment and reimbursement patterns, Dr. Graham said the heavy impact on medical practice would include decreased hospital costs. Also, he predicted, "We will lose the upper quartile of present physician incomes."

As an example of reimbursement-related changes in medical practice, he pointed out that membership in health maintenance organizations is becoming as attractive to patients as Blue Cross high option coverage. He predicted a 15 to 20 percent growth in HMOs nationwide, "because they're efficient, cost-effective and offer a relatively wide array of services."

The third factor, increased corporatism, will occur in all sectors of health care, Dr. Graham continued.

"Health care systems are becoming integrated as never before . . . ," he said. "There will be conscious attempt to forge more efficient systems.

"Here lies the real challenge: What will the family physician's role be in these integrated systems?"

"The 'gatekeeper' concept is the key to the survival of family practice," he asserted.

Whether described as gatekeeper or by some more palatable term, these physicians will virtually control health care utilization, according to Dr. Graham. They will be the ones to influence use of appropriate services, which patients will use them and whether appropriate procedures are being performed.

"The choice is whether family practice will be the gatekeeper, not whether there will be a gatekeeper in the integrated system. The degree to which we can see our principles fit into this role will determine our involvement in future health care systems," he said.

The fourth factor in change, philosophy of health care primarily as a moral obligation of society, synchronizes with the tenets of family practice, he pointed out. "We more than any other specialty . . . must be in the forefront of seeking access to health care for all people."

Putting his medically oriented remarks in a broader context, Dr. Graham said the four changes he spoke of will be experienced in an environment that gives some cause for optimism: "Futurists predict unexcelled economic growth in the next two decades . . . a shortage of workers will exist in 20 years . . . a potential exists for increased quality of life."

The professional commitment of family physicians to their patients as well as clinical excellence stands them in good stead to withstand the vagaries of change, Dr. Graham concluded.

"If we make good choices and stay true to our ideals . . . the next 10 to 20 years will be not only challenging and tumultuous but also rewarding," he said.

MEDICINE MUST BE A MORAL DISCIPLINE

Dr. G. Gayle Stephens, professor of family medicine at the University of Alabama in Birmingham, speaking at a recent S.T.F.M. meeting, spoke at length about contemporary changes and their effect on health care — then approached the recurring theme of moral commitment.

"No matter how the system is organized, who pays the bill or how it is paid," he said, "there must be a relationship of intimacy between doctor and patient, else medicine becomes the exercise of raw power, ultimately inhuman and demonic.

"Medicine must continue to be a moral discipline because it has intrinsic connections with substantive human values. There can be no good life without cure and care."

Of the family physician's role in medicine and in society, Dr. Stephens said perhaps it is to be "that of salt or yeast . . . [to] be the bearers of the public servant tradition in medicine."

Healing is not done by battalions, he said, "but one at a time, and I choose to believe that there will always be a place in medicine for the doctor who chooses to share the brokenness and suffering of persons, who knows that death is not the worst enemy, that suffering can be redemptive and that healing can only occur within community."

USDSM M.D. Graduates Entering Family Practice Residencies By Third Year Clerkship Base

Academic Year	Number of Graduates	Third Year Clerkship Base*	
		X(66%)	Y(34%)
1976-77	39	8/26(30.7%)	1/13(7.6%)
1977-78	36	4/23(17.3%)	0/13(0%)
1978-79	39	9/27(33.3%)	2/12(16.6%)
1979-80	47	11/31(35.4%)	3/16(18.7%)
1980-81	49	16/33(48.5%)	4/16(25%)
1981-82	44	5/29(17.2%)	1/15(6.6%)
1982-83	49	4/31(12.9%)	4/18(22%)
1983-84	50	5/34(14.7%)	2/16(12.5%)
		62/234(26%)	17/119(14%)
	353	79/353(22%)	

* Students are distributed 2/3 and 1/3 to clerkship sites X & Y, but self-select which site they prefer.

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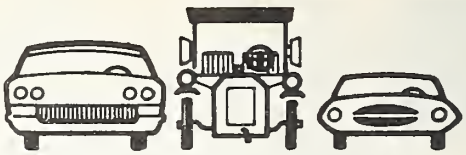

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Leadership Confluence

Anywhere today on the news front of the world, from the Dakotas to the Kremlin, where reporters gather after working hours to relax and swap stories, conversation is almost certain to turn eventually to the news of the day. We auxilians (Ellie Frost, Marie Hovland, Ila Lushbough, Shirley Ryan and myself) chased down the news stories of the Leadership Confluence October 14-16, 1984 at the Drake Hotel, Chicago, Illinois. (Some auxilians got a "sneak peak" of Raquel Welch and George Burns, who were guests of the Drake Hotel.) One could say much about the course of these dynamic days which entailed hours of 7:00 a.m. until 9:00 p.m.; however, this is just a brief synopsis of exploring and experiencing the auxiliary firsthand.

More than four hundred (400) auxilians, including state presidents, presidents-elect, membership chairmen, national board and committee members, past presidents and honorary members attended this annual meeting for the purpose of providing leadership training, program seminars, and discussion groups for county presidents-elect.

A broad spectrum of activities included Billie Brady (Mrs. Wayne C.), AMA Auxiliary president, presiding at the Opening Session; Keynote speaker James H. Sammons, MD, Executive Vice President, American Medical Association.

Others included: Ron Richards, President, Venture Network, San Francisco, California; Marilyn Benveniste, Author and Consultant, Atlanta Georgia; Ross Rubin, Director, Department of Federal Legislation, American Medical Association, Chicago, Illinois; Carla Wyckoff, Director, Division of Medical Society Relations, American Medical Association, Chicago, Illinois; Russell G. Miller, J.D., Certified Professional Parliamentarian, Chicago, Illinois; Dave Partridge, Director, Public Relations, Greenville Hospital System, Greenville, South Carolina; Marie Kisiel, PhD, Professor of Humanities, Roosevelt University, Chicago, Illinois; David L. Schmidt, President, Management Development Associates, Shawnee Mission, Kansas; Karen E. Watkins, PhD, Lecturer in Adult Education and Human Resource Development, University of Texas, Austin, Texas; Fred C. Rainey, MD, Chairman, American Medical Political Action Committee; Sol Landau, PhD, President and Executive Director, Mid/Life Services Foundation, Miami, Florida; Ann L. Wilson, PhD, Associate Professor of Pediatrics, University of South Dakota School of Medicine, Sioux Falls, South Dakota; Anne H. Cohn, M.P.H., D.P.H., Executive Director, National Committee for Prevention of Child Abuse, Chicago, Illinois; Jean H. Kokes, PhD, Psychologist, Isenberg and Associates, Chicago, Illinois; Leah Lefstein, Associate Director, Center for Early Adolescence, University of North Carolina at Chapel Hill, Carrboro, North Carolina; Joseph Cruse, MD, Corporate Medical Director, River Park Corporation, Pierre, South Dakota; Elvoy Raines, J.D., Associate Executive Director, American Society of Law and Medicine, Boston, Massachusetts; Joseph F. Boyle, MD, President, American Medical Association.

We responded to these exhilirating and brilliant seminars with new sparks of "vim and vigor."

"Serve as leaders, because service is the rent we pay for our time on this earth."

Mary Wrage

Mary Wrage, President
South Dakota State Medical Association Auxiliary

Future Meetings

February

Advances in Endourology, Malcolm Moos Hlth. Sci. Tower, U. of Minn., Minneapolis, MN, Feb. 1-2. AMA Category I credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

New Clinical Applications in Cardiac Imaging and Therapeutic Interventions, Prospector Square Hotel, Park City Ski Resort, Park City, UT, Feb. 3-8. Fee: $450. 25½ hrs. Category I credits. Contact: ACC, Extramural Prog. Dept., 9111 Old Georgetown Rd., Bethesda, MD 20814. Phone: (301) 897-5400, ext. 230.

New Concepts in Management of Cardiovascuiar Diseases, Fairmont Hotel, New Orleans, LA, Feb. 14-16. Fee: $355. 16½ hrs. AAFP & AMA Category I credits. Contact: ACC, Extramural Prog. Dept., 9111 Old Georgetown Rd., Bethesda, MD 20814. Phone: (301) 897-5400, ext. 230.

Annual Oncology Review, Century Plaza Hotel, Los Angeles, CA, Feb. 14-16. 20 hrs. Category I credits. Contact: UCLA Extension Dept. of Health Scien., 10995 LeConte Ave., Rm. 614, Los Angeles, CA 90024.

Lower Extremity Trauma, Sheraton, Steamboat Springs, CO, Feb. 17-20. Fee: $600. 18 hrs., Category I credit. Contact: PSEF, P. O. Box 94452, Chicago, IL 60690.

Fourth Annual Big Sky Pulmonary Conference, Christmas Seal Bldg., Helena, MT 59601, Feb. 20-23. Fee: $125. 13.5 hrs. AAFP & AMA Category I credits. Contact: Am. Lung Assoc. of Mont., 825 Helena Ave., Helena, MT 59601. Phone: (406) 442-6556.

The Thirty-Eighth Annual Symposium on Fundamental Cancer Research, Shamrock Hilton Hotel, Houston, TX, Feb. 26-Mar. 1. 16.5 hrs. AMA Category I credits. Contact: Joan B. Baird, M. D. Anderson Hospital & Tumor Instit., Texas Med. Center, 6723 Bertner Ave., Houston, TX 77030. Phone: (713) 792-3030.

Topics in Geriatric Medicine: Drug Therapy Symposium VI, Radisson St. Paul Hotel, St. Paul, MN, Feb. 27-28. AMA Category I credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

March

Review and Update, General Pediatrics and Family Practice, Sheraton Hotel, Cancun, Mex., Mar. 2-9. Fee: $400. 24 hrs. AAFP & AMA Category I credits. Contact: Marge Adey, Ctr. for Cont. Ed., U. of Neb. Med. Ctr., 42nd & Dewey Ave., Omaha, NE 68105. (402) 559-4152.

Annual Women in Medicine Symposium, Malcolm Moos Hlth. Sci. Tower, U. of Minn., Minneapolis, MN, Mar. 1-2. AMA Category 1 hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

The 28th Annual Postgraduate Diagnostic Radiology Course, Fairmont Hotel, San Francisco, CA, Mar. 11-15. Fee: $425. 37 hrs. Category 1 credits. Contact: Radiology Postgrad. Ed., U. of CA, San Francisco, CA 94143.

Lower Extremity Trauma, Sheraton at Steamboat, Steamboat Springs, CO, Mar. 17-20. Fee: $600. 18 hrs. AMA Category I credits. Contact: PSEF, Michigan Ave. Nat'l Bank, P. O. Box 94452, Chicago, IL 60690. Phone: (312) 856-1818.

Advanced Cardiac Life Support, U. of Kans. Med. Ctr., Kansas City, KS, Mar. 20-21. Fee: $150. 13.5 hrs. AAFP & AMA Category I credits. Contact: Jan Johnston, Off. Cont. Ed., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Trends in Specialization: Tomorrow's Medicine, Westin Hotel O'Hare, Chicago, IL, Mar. 20. Contact: Am. Board of Med. Specialties, One American Plaza, Suite 805, Evanston, IL 60201. Phone: (312) 491-9091.

Cardiology for the Primary Care Physician, Palm Springs Spa Hotel, Palm Springs, CA, Mar. 22-24. 18 hrs. AAFP & AMA Category I credits. Contact: CME Office, M-017, UCSD School of Med., La Jolla, CA 92093. Phone: (619) 452-3940.

Family Practice Refresher Course — 1985, Palm Springs Spa Hotel, Palm Springs, CA, Mar. 25-29. 30 hrs. AAFP & AMA Category I credits. Contact: CME Office, M-017, UCSD School of Med., La Jolla, CA 2093. Phone: (619) 452-3940.

Complicated Problems in Hand Surgery, Hotel Wildwood, Snowmass, CO, Mar. 25-29. Fee: $500. 30 hrs. Category I credits. Contact: Am. Society for Surgery of the Hand, 3025 S. Parker Rd., Suite 65, Aurora, Colorado 80014. Phone: (303) 755-4588.

Topics in Clinical Medicine, Holiday Inn City Centre, Sioux Falls, SD, Mar. 29-30. Contact: Central Plains Clinic, Bus. Office, 2727 S. Kiwanis, Sioux Falls, SD 57105.

April

Annual Ophthalmology Specialty Course: Glaucoma, Holiday Inn Downtown, Minneapolis, MN, Apr. 1-2. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Allergy and Clinical Immunology, Mayo Mem. Aud., U. of Minn., Minneapolis, MN, Apr. 11-13. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Eating Disorders, Earle Brown Ctr., U. of Minn., St. Paul, MN, Apr. 12-13. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Colorectal Problems for Primary Care, Hyatt Regency Hotel, Minneapolis, MN, Apr. 12-13. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Family Practice Review: Update 1985, Radisson St. Paul Hotel, St. Paul, MN, Apr. 15-19. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

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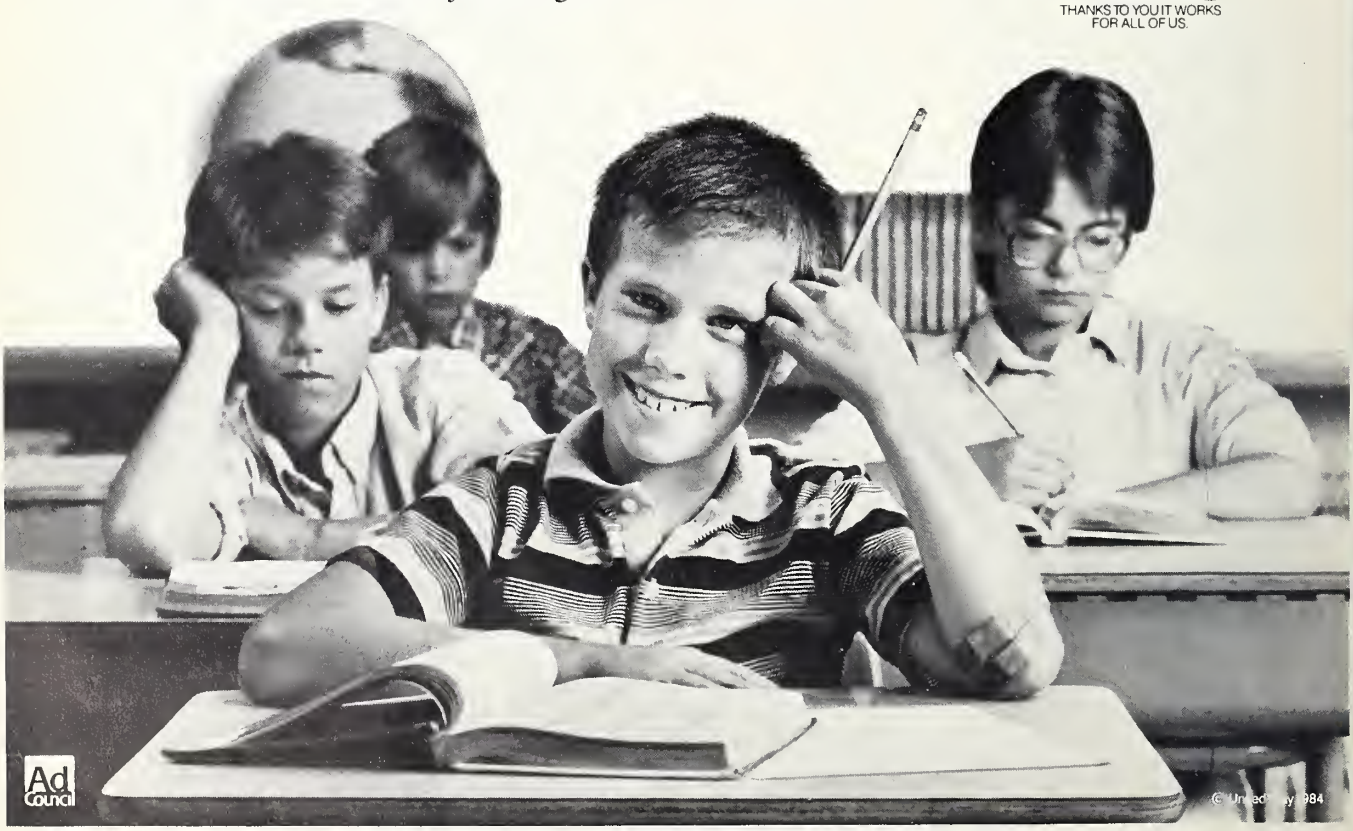

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SOUTH DAKOTA JOURNAL OF Medicine

Conduct Disorders and Other Psychiatric Disorders: Results of an Inpatient Service

Clinicopathological Conference
Twenty-One Year Old Caucasian Male With Right Testicular Mass

USD School of Medicine
Congenital Cystic Anomalies of the Biliary Tract

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Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

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The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

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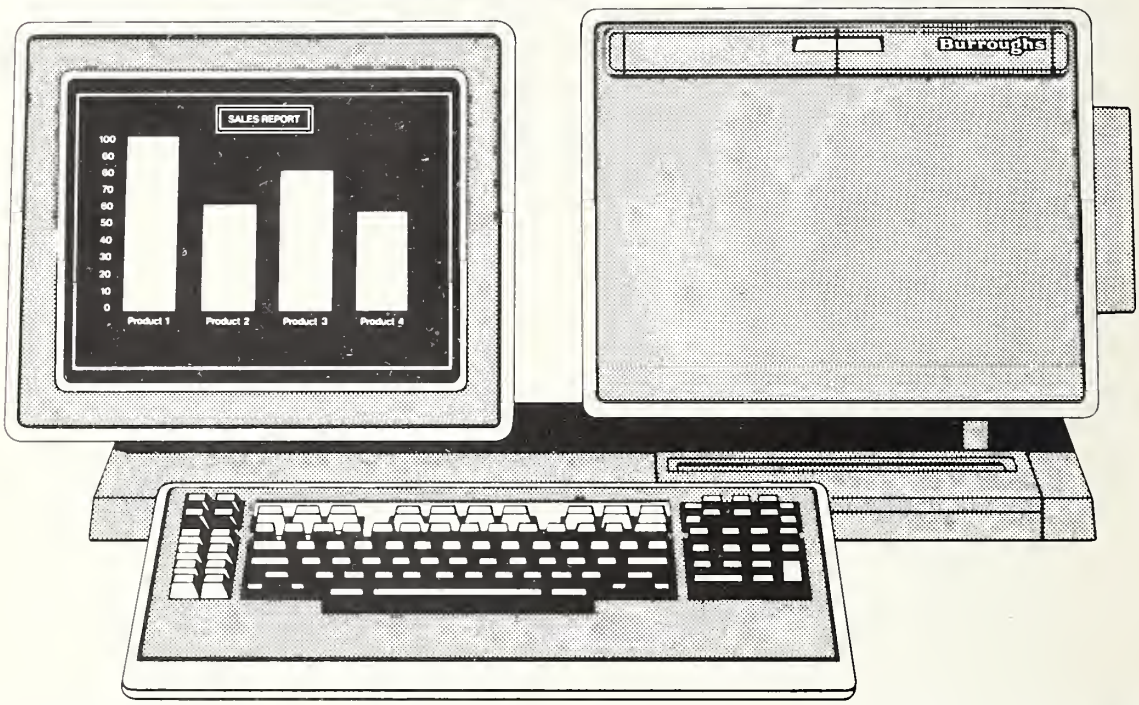

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Conduct Disorders and Other Psychiatric Disorders: Results of an Inpatient Service

W. Vail Williams, Ph.D.*
David W. Bean, M.D.†
John Carlson, B.S.‡
Nancy Christopherson, M.A.§

ABSTRACT

Outcome adjustment of adolescents admitted to a State Hospital Inpatient Psychiatric Program was examined. Ratings for success or failure were completed at discharge and one year later for patient groups according to Conduct Disorder Subtypes and "other" Psychiatric Disorders. Two-thirds of the patients were rated successful at one year, while Under-Socialized Aggressive Conduct Disorder and Substance Abuse patients had poor outcome adjustments. Admission MMPI profiles were examined for target symptom differences between groups.

Adolescent psychiatric inpatient units and programs for juvenile delinquents have frequently been controversial in terms of their effectiveness for rehabilitating troubled adolescent youth. Much of the criticism leveled at these programs is the result of extended separation from home, separation from significant others, as well as considerable emotional, social, and economic impact that hospitalization or institutionalization has upon the adolescents, their families, and their communities. Despite this criticism, during the past decade, several studies have revealed improvement in two-thirds to three-quarters of all behavioral disordered adolescent youth discharged from inpatient settings.[2, 3, 5, 11] These positive rates are in contrast to the poor outcomes associated with hospitalized psychotic adolescents.[10] Most recently, researchers have shifted their attention to the different types of behavioral disordered adolescent youth. One such grouping of behavior disorders for adolescents is the conduct disorder category with its four sub-types.[1] Research on these sub-types has demonstrated that socialized conduct disorders have better outcomes than undersocialized conduct disorders whereas it is more difficult to distinguish between aggressive and nonaggressive conduct disorders in terms of treatment outcome adjustment.[6] While research has centered around either aggressive or socialized behavior disordered youth, little attention has been paid to sex differences among conduct disorders or differences among the four sub-categories of conduct disorders with regards to outcome adjustment following treatment or rehabilitation.

The present study examined the outcome adjustment of adolescents admitted to a state hospital inpatient psychiatric program designed to treat behavioral disorders, as well as other traditional psychiatric syndromes. The overall question asked was how effective a "generic" treatment program would be for conduct disordered youth if allowances were made for other psychiatric syndromes involving adolescents (i.e. psychotic, affective, and substance abuse disorders). Particular attention was given to conduct disorder categories, sex differences, and target symptom differences for good and poor outcomes.

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METHOD

Subjects:

Patients were 119 adolescents (12 to 19 years old) that were consecutive admissions to an inpatient psychiatric program between January, 1980 and January, 1983. There were 70 males and 40 females with mean ages of 15.26 and 15.28, respectively. Average lengths of stay for males was 152.7 days and 139.5 days for females. Sixty-seven (56%) males and females were classified as conduct disorder and 52 (44%) males and females were classified in other psychiatric syndromes according to DSM-III.[1]

Program:

This study was conducted on a 20-bed, all adolescent inpatient psychiatric ward housed in a state hospital in a rural midwestern state. The program was self-contained. Patients were referred from mental health centers, state judicial system, Indian Health Service, private practitioners, Social Services, and voluntary sign-in by guardians. Admission criteria excluded those classified as mentally retarded (I.Q. below 75) and no previous treatment on an outpatient or inpatient basis, unless committed by mental illness boards as mentally ill. The average age for all patients was 15.3 years with an average length of stay of 137 days. The program is staffed by a psychiatrist, psychologist, psychiatric social worker, youth counselors, nurses, recreational therapist, occupational therapist, special education teachers, psychiatric aides and a consulting pediatrician. The program combined three major elements: (1) operant behavioral techniques; (2) psychodynamic interventions, and (3) an accredited special education school. Contingency contracting, daily feedback, and increasing levels of responsibility for self-direction and care for others comprise the operant behavioral techniques.[8] Psychodynamic interventions consisted of individual therapy, group therapy, family therapy, recreational and occupational activities, and special groups involving assertiveness, daily living, and vocational activities. The special education school program involved 25 hours of classroom instruction weekly through the year. The school program established an educational plan for each patient, which was flexible enough to allow patients to continue courses from their own schools, as well as meet special education needs required by the individual patient. The use of a confrontive peer-pressure approach, along with house rules and policies, provide much of the basic program structure. At the end of the treatment period, 60% of the patients were discharged to their homes; 20% were discharged to longer term residential facilities and 20% were discharged to foster care, group homes, or private care agencies.

Procedure:

Within 10 days after admission, an initial staffing was held to establish each patient's individualized treatment plan that included psychiatric diagnosis in accordance with the American Psychiatric Association DSM-III diagnostic criteria. In addition, 71% of the patients were administered the MMPI in order to identify target symptoms. Based upon the diagnosis, 19 patients (16%) were diagnosed socialized aggressive conduct disorders; 23 (19%) were diagnosed socialized nonaggressive; 18 patients (15%) were diagnosed undersocialized aggressive conduct disorders; and 7 patients (6%) were diagnosed undersocialized nonaggressive. Among the other traditional psychiatric diagnoses, 14 patients (12%) were diagnosed as being psychotic with thinking disorders, 8 patients (7%) were diagnosed as affective disorders, 10 patients (8%) were diagnosed as adolescent adjustment reaction, 8 patients (7%) were diagnosed as substance abusers, 9 patients (8%) were diagnosed as personality disorders, and 3 patients (2%) were diagnosed as organic mental disorders.

In order to evaluate treatment effectiveness and obtain follow-up data, each patient was rated as a success or failure at discharge from the hospital and again one year later. At discharge, the patient was rated a success if he or she had completed his or her program according to the objectives of the individualized treatment plan and had shown improvement or progress to the point of being able to transfer to a lesser restrictive alternative living or treatment situation. Patients were rated as treatment program failures when showing no improvement or progress, not completing the program, needing a more restrictive setting, or being discharged against medical advice. Ratings were based upon a concensus of the professional staff. After the patient was discharged from the hospital, three follow-up contacts were made at the three month, six month and one year intervals. These contacts were either face to face with the patient or by telephone contacts to parents, guardians, court service workers, social service workers, probation officers, other mental health/health professionals, and/or the patient directly. The major purpose of these contacts was to determine the subsequent adjustment of each patient. A composite rating was made at the end of the one year interval for either success or failure in adjustment. A successful rating was based upon the following criteria: (1) continued improvement (remission) in target symptoms, behaviors, or problems that existed prior

to treatment, (2) no criminal offenses, (3) no increased use of other mental health services after discharge, (4) success as indicated by significant others, and (5) patient not placed in a more restrictive setting than the hospital unit when discharged from treatment. A rating of failure was recorded if the above criteria was not met at any time during the one year interval.

RESULTS

Examination of the demographic data revealed no significant differences between males and females on variables of age, length of stay, ethnic group, and diagnosis. Examination of the conduct disorder groups and the other psychiatric diagnosis revealed no differences on variables of sex, ethnic group, and length of stay. However, those diagnosed as conduct disorder were slightly younger ($t = 3.33$, $p < .01$). The mean age of the conduct disorder group was 14.8 years, whereas the mean age of the "other" diagnostic group was 15.9 years. Of the 119 patients included in this study, 83 (70%) were discharged as successful. At the one year follow-up, 76 (64%) patients were then rated successful. At the time of discharge, those subjects rated as successful had a significantly longer length of stay ($t = 2.30$, 117 df, $p < .05$) (Table I). There were no differences between ages, sex, or ethnic groups in regards to success or failure at discharge or one year later.

At discharge, 45 (67%) of the 67 conduct disorder patients were rated successful and 39 (75%) of the 52 "other" psychiatric patients were rated as successful. At the one year follow-up interval, 41 (61%) of the conduct disorders were rated successful, whereas 34 (65%) of the "other" psychiatric patients were rated successful. In comparing the various subtypes of conduct disorder (Table II), there were no significant differences between the sub-types for age, length of stay, or success/failure at discharge. However, there was a tendency for the undersocialized aggressive conduct disorder to be less successful one year later following discharge ($x^2 = 6.35$, 3df, $p < .09$). On the other hand, comparing the socialized and undersocialized conduct disorder, as well as the aggressive conduct disorder to the nonaggressive conduct disorder, revealed no significant differences in regards to discharge or outcome success.

Comparisons of the classifications of the "other" psychiatric syndromes (Table III), revealed the sub-

TABLE I
AGE, LENGTH STAY, SEX, AND DIAGNOSTIC GROUP AT DISCHARGE AND FOLLOW-UP

	Discharge		One Year		
Variable	Success	Failure	Success	Failure	P Value
Age	15.1 ± 1.9	15.6 ± 1.8	15.3 ± 1.9	15.2 ± 1.8	N.S.
Length Stay	151.9 ± 113.7	104.1 ± 76.6			< .05
Males	47 (67%)	23 (33%)	41 (59%)	29 (41%)	N.S.
Females	36 (73%)	13 (27%)	34 (69%)	15 (31%)	N.S.
Conduct Disorder	45 (67%)	22 (33%)	41 (61%)	26 (39%)	N.S.
"Other"	39 (75%)	13 (25%)	34 (65%)	18 (35%)	N.S.
TOTAL	83 (70%)	36 (30%)	75 (63%)	44 (37%)	N.S.

TABLE II
AGE, LENGTH STAY, AND OUTCOME RATINGS FOR CONDUCT DISORDER SUB-TYPES

Variables	Soc. Agg.	Soc. N.Agg.	Unsoc. Ag.	Unsoc. N.Ag.	P Value
Age	15.2 ± 1.8	14.6 ± 2.4	14.6 ± 1.9	14.1 ± 1.8	N.S.
Length Stay	150 ± 85	126.9 ± 69	144 ± 70	117.6 ± 76.8	N.S.
Dsch. Success	12 (63%)	17 (74%)	10 (56%)	6 (86%)	N.S.
Dsch. Failure	7 (37%)	6 (26%)	8 (44%)	1 (14%)	N.S.
One Yr. Success	13 (68%)	15 (65%)	7 (39%)	6 (86%)	< .09
One Yr. Failure	6 (32%)	8 (35%)	11 (61%)	1 (14%)	< .09

TABLE III
AGE, LENGTH STAY AND OUTCOME RATINGS FOR "OTHER" PSYCHIATRIC DIAGNOSIS

Variable	Psychosis	Aff. Dis.	Organic	Adj. R.	Sub. A.	Per. Dis.	P Value
Age	16 ± 1.6	16.1 ± 2.5	16 ± 2.6	15 ± 2	16.4 ± 1.2	16.4 ± 2.1	N.S.
Length Stay	152 ± 78	129 ± 60	101 ± 69	109 ± 92	94 ± 67	108 ± 48	< .10
Dsch. Success	12 (86%)	6 (75%)	1 (33%)	8 (80%)	4 (50%)	8 (89%)	N.S.
Dsch. Failure	2 (14%)	2 (25%)	2 (67%)	2 (20%)	4 (50%)	1 (11%)	N.S.
One Yr. Success	10 (71%)	5 (63%)	1 (33%)	10 (100%)	1 (13%)	7 (78%)	< .01
One Yr. Failure	4 (29%)	3 (37%)	2 (67%)	0 (0%)	7 (87%)	2 (22%)	< .01

stance abuse patients to have a slightly shorter length of stay ($t = 1.77$, 20df, $p < .10$). In addition, substance abuse patients and organic patients were rated as significantly less successful at the one year outcome intervals ($x^2 = 13.71$, 1df, $p < .01$). There were no differences among the "other" psychiatric syndromes on the variables of mean age or rating at the time of discharge from the treatment program.

After combining sub-types within the conduct disorder group and combining the "other" psychiatric classifications into one group, no significant differences were revealed between the conduct disorder group and the "other" psychiatric group with regards to discharge success or outcome success. In addition, comparisons for male and female patients in the conduct disorder group and the "other" psychiatric group revealed no differences for success or failure at discharge or outcome.

Examination of admission MMPI profiles* for males rated successful at discharge revealed slightly lower mean L scale scores ($t = 1.7$, 46df, $p < .10$), lower mean hysteria scale scores ($t = 1.78$, 46df, $p < .09$) and lower mean masculinity scale scores ($t = 1.86$, 46df, $p < .09$) as compared to males rated failure at discharge. Females rated successful at discharge revealed significantly higher mean hysteria scale scores ($t = 2.86$, 34df, $p < .01$) and slightly lower mean psychopathic scale scores ($t = 1.78$, 34df, $p < .09$) as compared to females rated a failure at discharge. Examination of MMPI profiles for male conduct disorders as compared to males classified as "other" psychiatric disorders revealed essentially no differences, except a slightly higher mean score on the paranoia scale ($t = 1.93$, 46df, $p < .09$). On the other hand, female conduct disorders had lower mean depression scale scores ($t = 2.4$, 34df, $p < .05$), lower mean feminity scale scores ($t = 3.1$, 34df, $p < .01$), and higher mean hypomania scale scores ($t = 2.2$, 34df, $p < .05$) as compared to females classified in "other" psychiatric disorders. In examining the conduct disorder group, MMPI profiles of socialized conduct disorders revealed lower mean F scale scores ($t = 2.2$, 46df, $p < .05$) and lower mean paranoia scale scores ($t = 2.3$, 46df, $p < .05$) as compared to the undersocialized conduct disorder group. In comparing the aggressive conduct disorders to the nonaggressive conduct disorders, there were essentially no differences, except that the aggressive group had slightly higher mean paranoia scale scores ($t = 2.0$, 46df, $p < .09$).

In terms of placement after discharge, the two most frequent placements were to return to home (60%) and referral to another state agency (20%). Referral to another state agency was generally a referral to a more restrictive setting and was the result of failure in the treatment program ($x^2 = 17.3$, 1df, $p < .001$). There was no relationship between placement and diagnosis or gender for either conduct disorders or other psychiatric disorders.

DISCUSSION

The results suggest that it is indeed possible to design a successful adolescent inpatient psychiatric treatment containing a variety of diagnostic patterns, males and females, as well as mixed ethnic groups. Not only is the finding that two-thirds of the patients had successful outcomes consistent with previous studies,[2, 5] but is perhaps one of the few studies showing successful outcomes for Native American youth. While the five month average length of stay for the successful outcome group may seem like a long time compared to studies in private psychiatric settings,[2] it should be kept in mind that these patients had previous treatment in other outpatient or inpatient settings and required a more restrictive setting at the time of admission to the program. In this study, average length of stay is short compared to state training schools or other juvenile correctional settings.[7]

The admission MMPI profiles of patients who were later successful in the program when rated at discharge, revealed these patients to be more in control of their anger, exhibit less acting out, and generally more self-assured. Successful males tended to be more conforming and did not use denial as a defense mechanism as frequently as their counterparts who were rated as failures in the program. On the other hand, successful females tended to be less conforming and to use denial more frequently compared to their counterparts who failed the treatment program.

While previous studies have demonstrated outcome adjustment differences between the socialized and undersocialized conduct disorders with little or no differences between aggressive and nonaggressive conduct disorders,[4, 6] the present study indicates it is the undersocialized aggressive conduct disorder who is likely to have a poor adjustment outcome. It seems the combination of parental rejection, lack of peer group influences and hostile confrontive-type behavior are factors which handicap this type of adolescent for successful treatment.[7] Furthermore, results of the admission MMPI profiles for conduct disorders seems to indicate that the undersocialized aggressive conduct disorder has a stronger tendency to be mistrustful of others, project blame for one's own difficulties onto others, and generally be suspicious of their environment. It

* MMPI profiles and mean scale scores are available from the author upon request.

seems clear that such symptom clusters must first be overcome in order to make a therapeutic alliance which would facilitate behavior change and self-mastery over the environment. As a whole, conduct disorders, when compared to "other" psychiatric disorders exhibit target symptoms of manipulation, distrust of others, use of projection as a defense mechanism, impulsive, more socially extroverted, more superficial on social relationships, and a tendency to act out more frequently. Another interesting finding was that female conduct disorders compared to females diagnosed with "other" psychiatric classifications exhibited less depressive symptomatology.

Perhaps the most interesting finding in the present study was that adolescents with psychotic disorders did equally as well in terms of successful outcome adjustments as did their behavioral and less emotionally disturbed counterparts. This finding is in contrast to much of the literature on inpatient adolescent treatment programs which indicate that adolescents with psychotic disorders have a higher recidivism rate and a poor community adjustment compared to non-psychotic adolescent patients discharged from inpatient programs.[3, 9] In addition, the results of this study appear to indicate that the chemically dependent adolescent may need a more specialized treatment approach which would focus more time and attention to the nature of chemical dependency in a structured treatment setting.

Research on the outcome of adolescent treatment programs seem to be marred by "methodological issues." This current evaluation of an inpatient treatment program is no exception. The present study lacked a control group, was limited by small sample numbers in some diagnostic categories, and contained short follow-up intervals out to only one year. Also, the use of staff ratings rather than more objective measures was another methodological problem. Despite these limitations, the present study adds to the continuing data suggesting that psychiatric interventions into emotionally disturbed and delinquent youth is worthwhile, particularly when one considers that the majority of these youths were returned to the home environment and needed no additional mental health or corrective case services. Finally, this study indicated potential symptom clusters that were more receptive to treatment as compared to symptom clusters that were more resistive to treatment. Certainly if a patient is defensive, suspicious, or mistrustful of others, uses projection as a defense mechanism and tends to aggressively act out on an impulsive basis, he or she is more resistive to successful treatment. Yet this is only a beginning, additional research efforts are needed to identify active treatment components that contribute to long term successful outcome, particularly when one considers the total cost of inpatient programs in terms of dollars and disruption to families and communities.

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1. Two-thirds of the public is losing faith in doctors in general, but less than 20% in their own personal MD. This on the basis of fees, access for care, and availability of MD.
2. Ninety percent of the **"paid claims"** were found to be nondefensable, but 5 out of 6 claims that go to court are resolved in favor of the doctor. Sounds like we all do need to clean up our record keeping and carefully document all pertinent data.
3. Mandatory assignment and physician DRG's are not dead, and the AMA is covering these very carefully. Actually, MD fees are less than 19% of the total cost of Medicare and Medicaid.

Professional liability seems now to be on the basis of being available but affordability continues to escalate. One prognosticator suggested that by 1995 — 2000 the premium could go to 50,000 to 75,000.

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Twenty-One Year Old Caucasian Male With Right Testicular Mass

Joseph W. Nawrocki, M.D.*
Richard Reed, M.D.†
Michael Robinson, M.D.‡
Discussers

John F. Barlow, M.D.§
Editor

Case #1043584 (84-894)

This 21 year old caucasian male college student was admitted to Sioux Valley Hospital for evaluation of a right testicular mass.

For one month the patient had noted progressive painless enlargement of the right testis. Three days prior to admission the patient had a sudden onset of pain in the right testis with further enlargement. The pain was of dull, aching quality and disappeared in the 48 hours preceding admission. There was no associated dysuria or urethral discharge. The patient had had one episode of right lower quadrant pain radiating to the right testicle some months previously but this disappeared within two hours and was not associated with other symptoms. There was no swelling of either testis at that time.

There was no significant history on review of systems and no history of other hospitalizations or illnesses.

PHYSICAL EXAMINATION: Temperature 37°C; pulse 76/min and regular; respirations 20/min and regular; blood pressure 122 systolic and 74 diastolic; weight 66 kg. Examination of the head and neck was unremarkable. The chest was clear to auscultation and percussion. The heart was within normal limits of size with a normal sinus rhythm. There were no palpable organs, masses, spasm or tenderness in the abdomen. The left testis felt essentially normal. There was a 10.0 cm in greatest dimension right nontender scrotal mass which did not transilluminate and it was not possible to distinguish the testes from the epididymis. The mass was not adherent to the skin and there was no redness of the skin. Rectal examination was negative. Neurologic examination and examination of extremities were negative.

LABORATORY DATA: Urinalysis was yellow, clear, specific gravity 1.028, pH 8.0, negative for protein, glucose, ketones, bilirubin, and hemoglobin; sediment negative. Hemoglobin, 15.9 gm/dl, hematocrit 47% with normal red cell indices; total leukocyte count 7.4 x 10^9/L with a differential of 51% segmented neutrophils, 1% neutrophilic bands, 38% lymphocytes, 5% monocytes, 3% eosinophils and 2% basophils; platelet count 319 x 10^9/L. The red cells and platelets were normal on smear. A 12 panel chemistry including lactic dehydrogenase (LD), alkaline phosphatase, aspartate aminotransferase (AST, SGOT), total bilirubin, total protein, calcium, phosphorus, glucose, blood urea nitrogen, uric acid, cholesterol and creatinine were within normal limits. A quantitative beta subunit human chorionic gonadotrophin was below detectable limits. An alpha fetoprotein was 67 ng/ml (normal less than 25 ng/ml). A chest film was within normal limits. A computer tomogram of the abdomen and pelvis showed slight lymphadenopathy in the lower lumbar region and pelvis about the iliac vessels on both sides. An operation was performed.

DR. BARLOW: We received an 8 x 6 x 5.5 testis with an 8 cm length of spermatic cord. Embedded in the testes was a 3.5 cm in greatest dimension tumor with hemorrhagic foci and small cysts filled with serous fluid. The tumor did not grossly invade the tunica albuginea or epididymis at any point. Microscopically the neoplasm was composed of two major components (Fig. 1). One was a typical embryonal cell carcinoma with tubule or gland formation composed of cells with large nuclei with prominent nucleoli (Fig. 2). Necrosis was present and mitoses averaged one for every high power field. The other major component was composed of mature and immature teratoma. Immature mesenchyme in which

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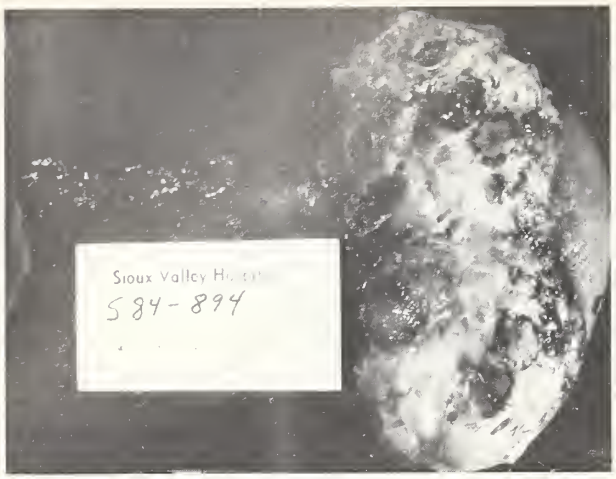

Figure 1
Note multicystic teratocarcinoma and long segment of spermatic cord. (above label)

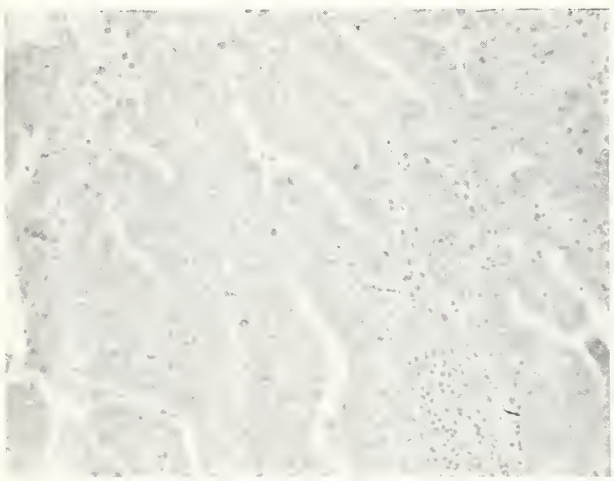

Figure 2
Typical area of embryonal carcinoma.

Figure 3
Area of teratoma with duct-like structure.

were found gland and duct like structures with cuboidal or columnar epithelium surrounded by a rim of smooth muscle were seen (Fig. 3). No elements suggesting seminoma or choriocarcinoma were present in a search of multiple sections. The combination of teratoma and embryonal carcinoma is often referred to as a teratocarcinoma. It should be noted that 40% of testicular tumors are combinations of the following elements any one of which may occur in pure form: seminoma, embryonal carcinoma, endodermal sinus tumor (yolk sac), choriocarcinoma or mature or immature teratoma. A general classification for therapeutic purposes divides all testicular tumors into pure seminomas and lumps pure or combinations of other tissues mentioned above into the nonseminomatous tumors. This is useful clinically because radiation after orchiectomy is the primary therapy for seminoma and retroperitoneal lymphadenectomy and/or multiple drug chemotherapy for nonseminomatous germ cell neoplasms of the testis are the best therapeutic modalities.

FINAL ANATOMIC DIAGNOSIS EMBRYONAL CARCINOMA AND TERATOMA OF TESTIS (TERATOCARCINOMA)

Subsequent bilateral retroperitoneal exploration and lymphadenectomy revealed no gross or microscopic evidence of neoplasm.

DR. NAWROCKI:

INCIDENCE OF TESTICULAR TUMORS

One to two percent of all cancers occurring in males have been diagnosed as testicular germ cell tumors. This averages about 2.2 per 100,000. This is the most common cancer between ages 25 to 35. The tumor is rare in blacks with a 4 to 1 ratio of whites to blacks. New cases are diagnosed at a rate of 50,000 per year in the United States. Testicular tumors are the 4th leading cause of death in males between the ages of 15 and 34 with pulmonary metastases being a leading cause of death.

Also of note is the increased incidence of testicular tumors over the last few years. This increase could be related to better diagnostic techniques. Testicular tumors have been known to be associated with cryptorchism with a 12 to 48 times increased risk. Some report a 1-2% incidence of bilateral testicular tumors found in the first few months to years following diagnosis of the initial tumor. Dietman et al reported up to a 30% bilateral incidence in those with cryptorchism.

DIAGNOSIS OF TESTICULAR TUMORS

Control of testicular neoplasm is much easier if

the diagnosis is made early in the course of the disease. However, the diagnosis is often delayed up to 6 months because of confusion with entities such as epididymitis and epididymorchitis. Another reason for delayed diagnosis is failure to examine the testicles in males on routine physical examination. With the emphasis to examine more thoroughly of late, 10% of the testicular tumors have been diagnosed in asymptomatic patients. However, most tumors still present with large masses in 75-90% of the cases. Pain is the presentation in 15-49% with an average of about 21%. Unfortunately 14% do present with symptoms of metastasis. Metastases subsequently are found in about 25% of those with seminomatous testicular tumors and 70% of those with nonseminomatous testicular tumors in the sites of predilection for metastatic spread-lymph nodes in the retroperitoneum and pulmonary parenchyma.

A definitive noninvasive method for the diagnosis of testicular tumors is not available even with new methods of imaging including ultrasound so that diagnosis still rests with surgical exploration through a high inguinal incision. If malignancy is suspected grossly, then orchiectomy with spermatic cord resection through the inguinal canal is performed. Transcrotal biopsy or not resecting the spermatic cord risks the spillage of tumor and metastatic spread via inguinal lymphatics, a route not usual for testicular neoplasm.

After obtaining tissue, pathological evaluation is important to determine the management and subsequent treatment. There are many types of classifications of germ cell tumors. The WHO (World Health Organization) system of international histological classification of germ cell tumors is summarized below:

A. Single histiological type without other components.
   1. **Seminoma** — This is the most frequent tumor and constitutes 40% of all testicular germ cell neoplasms. 80% of these are typical and 10% are anaplastic (increased mitotic rate). The latter may behave more aggressively.
   2. **Spermatocytic seminoma** — This type of seminoma has an excellent prognosis, a characteristic histologic picture and constitutes less than 10% of seminomas.
   3. **Embryonal cell carcinoma** — 15 to 20% of the total.
   4. **Yolk sac tumors (endodermal sinus tumor)** — 10% of the total.
   5. **Polyembryoma** — (rare).
   6. **Choriocarcinoma** — 1-2% of total.
   7. **Teratoma** 10% of total.
      a. Mature.
      b. Immature.
      c. With malignant transformation.

B. Mixed germ cell testicular tumors. 40% of all testicular neoplasms fall into this category.
   1. Mixed embryonal with teratoma, 24% of the mixed tumors (teratocarcinoma).
   2. Choriocarcinoma plus others in a combination.
   3. Other combinations of germ cells.

The overall breakdown according to the WHO classification indicates 60% of the testicular tumors are nonseminomatous. Some authors suggest that the embryonal cell is just a stem cell from which all the other nonseminomatous tissues develop. After age 50, large cell lymphoma is the most common tumor of the testes and has a poor prognosis.

As mentioned previously, one of the most important aspects of testicular tumors is proper histological evaluation followed by a staging procedure to adequately indicate the appropriate type of management. Staging categories have been promulgated by many authors, i.e. International Unit against Cancer, Boden and Maier. There are many ways to proceed in staging a testicular cancer but since retroperitoneal lymph nodes are involved in 60-70% at diagnosis, a retroperitoneal lymphadenectomy has been promoted by most authors. Right sided tumors are found to spread predominantly to the lymph nodes near the vena cava and left sided testicular tumors drain to the periaortic and preaortic nodes below the renal pedicle. Contralateral involvement of lymph nodes is found in 15-20% of cases. Most tumors spread via the lymphatic system early. However, choriocarcinoma spreads both by vascular and lymphatic vessels early, but the rest of the testicular tumors spread through the blood stream at a later time.

STAGING

In the determination of staging, various modalities have been utilized. One of the first was lymphangiography, producing a false negative rate of 20% and a false positive rate of 12-22%. Lymphangiography is also not recommended because tissue reaction to the dye makes pathological evaluation difficult. Ultrasound is a new technic and, as mentioned before, in need of further study. However, computer tomography (CT) of the lungs and abdomen has markedly improved the evaluation of the staging process. Radiographic tomography of the lung is better than CT of the lung because CT is less specific. To be emphasized is the fact that a negative plain chest x-ray alone misses up to 10% of lesions. A CT scan of the abdomen with ultrasound to evaluate the hilar nodes has shown a 0% false positive and a 14% false negative rate with about a 75% accuracy

and 12% equivocal interpretation. Ostra found an 80% accuracy using CT with ultrasound of the abdomen to better delineate lymph node involvement. The main method involved in staging lymph node involvement is still retroperitoneal lymphadenectomy. One staging system used frequently is that set forth by Fraley et al:

Stage 1 — Confined to the testis

Stage 2 — Metastasis in the retroperitoneum only — unless contaminated by previous procedures such as a transcrotal biopsy or spillage has taken place; then the inguinal nodes may be involved.

Stage 2S — Serum markers (to be discussed later) are elevated before lymphadenectomy but found to be normal after the procedure and no tumor is found in the lymph nodes obtained at lymphadenectomy.

Stage 2A — Microscopic evidence of tumor in six or less well encapsulated lymph nodes.

Stage 2B — Small amount of visible tumor or microscopic tumor in greater than six lymph nodes or microscopic extension of the tumor into retroperitoneal fat.

Stage 2C — Bulky testicular tumor with retroperitoneal fat involved. All disease removed at surgery.

Stage 2D — Like 2C but not able to surgically remove all the disease.

Stage 3 — Metastasis of the testicular tumor outside of the retroperitoneal nodes.

Stage 3A — A single metastasis found.

Stage 3B — Multiple metastases found.

Some have recommended a left supraclavicular nodal biopsy be included as part of the staging procedure, but this is not productive if the abdominal examination shows no adenopathy and the complications with the biopsy are considerable for the low yield in patients without adenopathy.

TUMOR MARKERS

As mentioned earlier, one of the most exciting areas of testicular tumor staging involves biomarkers. The biomarkers have proven quite useful in staging and monitoring response to therapy. In fact, some authors have advocated using markers as indicators of whether or not to proceed with adjuvant therapy and followup surgical procedures.

1. Alpha fetoprotein (AFP) — This particular marker is found to be increased in 70% of the patients with teratocarcinoma and embryonal carcinoma using the radioimmunoassay technique. However, AFP is also increased in 70% of the cases of hepatocellular carcinomas and is also increased in gastrointestinal carcinomas, ataxia telangiectasia, and hereditary tyrosinemia. AFP has never been found to be elevated in pure seminomas or in teratomas.
2. Beta human chorionic gonadotropin (BHCG). This particular marker is elevated in 40-60% of nonseminomatous testicular carcinomas. The marker is elevated in 10% of patients with seminoma. The concern generated by elevation in seminomas involves looking carefully for mixed testicular tumors. Often the pathological evaluation needs to be repeated to be sure mixed disease is not present. There is some controversy set forth by Schwartz et al suggesting that cases of pure seminomas with increased BHCG may just be watched after radiation therapy waiting until symptoms occur to begin combination chemotherapy.

BHCG elevations are also associated with hepatocellular carcinoma, and breast, lung, pancreatic, and gastric carcinomas as well as inflammatory bowel disease. BHCG is a useful marker if elevated after orchiectomy or lymphadenectomy to indicate residual or recurrent disease. BHCG can have a significant elevation due to cross reaction with serum LH (luteinizing hormone from pituitary) in patients who are hypogonadal after bilateral orchiectomy with marked rises in LH. One way to avoid this misleading elevation is to suppress the LH initially with testosterone and recheck the BHCG level.

The half-life of the AFP is about 5 days while that of the BHCG is 45-60 minutes. Therefore, the more sensitive indicator of residual disease is the BHCG. The markers may be identified in the tumor sections by immunologic techniques when not elevated in the serum initially.

However, one study showed a 50% incidence of normal marker levels after surgery in which persistent tumor was found on repeat surgical exploration. Overall a significant number of testicular tumors do not produce detectable markers at any time during the course of disease since one third of stage 1 nonseminomatous testicular tumors and most seminomas are marker negative. Surgery is the most appropriate initial step in evaluating testicular masses. 45% of all patients with testicular neoplasms have elevation of only one marker and 85% of cases with nonseminomatous tumors had elevation of just one marker.

Markers are a definite asset when elevated to help decide between further chemotherapy and/or radiation therapy after orchiectomy. Most importantly elevated levels of either marker help predict recurrence of testicular neoplasia and are often elevated up to 6 months before the disease is clinically present. Markers increased after an appropriate chemotherapeutic regimen represent persistent disease until proven otherwise and further evaluation is indi-

cated. Following surgery, an increase in markers point to a need for chemotherapy even if patients are clinically negative at the time or biopsy proven tumor is not evident. If the markers are negative after chemotherapy and/or surgical intervention, the physician still needs to evaluate the patient clinically; and, if disease is present, further treatment is needed. This could include biopsy, radiological evaluation, removal of residual lesions and/or additional chemotherapy.

THERAPY

1. Surgery — Surgical therapy is definitely the procedure of choice for stage 1 nonseminomatous disease alone. Surgery involves orchiectomy with retroperitoneal lymphadenectomy since retroperitoneal lymph nodes are the first site of spread. This produces an 80-90% long-term survival rate. Retroperitoneal lymphadenectomy should include the renal, aortic, caval, ipsilateral common, external and internal iliac lymph nodes. A controversial point is whether retroperitoneal lymphadenectomy is indicated if markers are elevated before but negative after orchiectomy.

   The current modality of therapy for pure seminomas is radiation therapy of 2000-3000 rads to the retroperitoneum over four weeks. Staging by noninvasive methods is indicated after orchiectomy. If nodes are found 600 extra rads are applied to the positive node areas. If bulky disease is found, 2000 rads is administered to the retroperitoneum and 4000 to the bulky disease elsewhere. The cure rate using radiation therapy is 90% in patients with no nodes involved and 75-90% when nodes are enlarged. However, in cases of stage 2B seminoma or a higher stage, intensive chemotherapy using cisplatinum is favored, since only 20-40% of these cases are cured with radiation therapy alone. The therapy for extragonadal germ cell tumors is similar to testicular lesions but the diagnosis of extragonadal tumors is often late because they are in silent areas of origin such as the retroperitoneum, mediastinum or pineal regions and are often inaccurately diagnosed as poorly differentiated carcinomas.
2. Chemotherapy — Combination chemotherapy is definitely given in patients with stage 3 nonseminomatous lesions. Some are advocating its use in stage 2B disease.

   The first group to use combination chemotherapy was in 1960 when Li et al employed chlorambucil, methotrexate and actinomycin D. They experienced a 50-70% response rate with a 10-20% complete remission rate. Hainsworth used similar combination chemotherapy and reported a 50% incidence of complete remissions. Samuels began using vinblastin and bleomycin in the 1970's. The vinblastin was found to arrest cells in the mitotic phase of the cell cycle and bleomycin worked best in the mitotic phase to kill cells. This combination is known as VB1. In the next phase of chemotherapy the Memorial Sloan Kettering Group began employing vinblastin, bleomycin, and actinomycin D (VAB1). Their latest combination is VAB6. The cure rate is not much different from that of the Einhorn group I which I will discuss later. The first to use cisplatinum in testicular malignancy appears to have been Higby and coworkers who found increased success rates in treating testicular neoplasms. In 1974 Einhorn began using it with a high success rate. Since then many protocols use a variety of chemotherapeutic drugs, different methods of induction, and varying treatment lengths.

   Since we have seen combination chemotherapy produce improved results in other malignancies, the logical assumption was that testicular cancer would also respond. This appears to be the case. Continuous improvement and more permanent cures are occurring with fewer relapses and these generally occur within the first two years after chemotherapy. As stated previously, one of the biggest areas of improvement in treatment of testicular tumors is the use of cisplatinum in combinations of chemotherapy. The cure rate for complete remission using cisplatinum went up to 80% with surgery and 60% of these were found to have no disease after two years. Another group reported a 70% complete remission rate and close to 100% disease free status in certain categories. There are a variety of combination chemotherapy and surgery protocols but the protocol generally accepted and in wide use today is that advocated by Einhorn, although others are adequate, including the Memorial Sloan Kettering Group method which uses the VAB protocol, the most recent being VAB6 utilizing cisplatinum, bleomycin, vinblastin, actinomycin D and cyclophosphamide with high dose induction and elimination of maintenance doses. The cure rate for VAB6 is similar to Einhorn's results of approximately 90% disease free status after two years.

   Einhorn chemotherapy approach. 1) Cisplatinum; 20 mg/meter^2 given intravenously (IV during 15 minutes) every day for 5 days. This is done once every three weeks for a total of three courses. A fourth course, if complete remission has not occurred, is then performed with no definite advantages going beyond the 4th course. Saline hydration for the cisplatinum is definitely important. This should be done 12 hours prior to

initiating cisplatinum and continued throughout the five day course of the cisplatinum therapy at a rate of 100 ml/hr of normal saline. 2) Bleomycin; 30 units IV every week for a total of 12 weeks. 3) Vinblastin; 0.2 mg/kg IV every day for a total of 2 days (0.4 mg/kg). This is done every three weeks during the 12 weeks of chemotherapy with the bleomycin. Vinblastin is given 6 hours prior to the bleomycin for the advantages stated previously. Maintenance chemotherapy by Einhorn involves vinblastin at 0.3 mg/kg every four weeks and is started after completion of the bleomycin and continued for a total of two years. Induction on Einhorn's protocol involves a 3-4 cycle induction and then a complete restaging workup including CT, tomograms, tumor marker levels in serum, and possibly surgical node restaging. A complete response is normalization of tumor markers and complete clinical and radiographical resolution of all sites of metastasis. If complete remission occurs, then close followup is indicated. Recommendation for follow-up involves monthly physical examinations, chest x-rays and serum markers for 12 months; and, if normal, decreasing to every 2 months for the second year. After that less frequent intervals may be employed.

If complete remission does not occur, then further treatment is needed. Forty to fifty percent of patients with a partial remission after induction can be expected to be disease free after surgical resection of residual localized tumor. With the resection of localized tumor, Einhorn found 35% of the resected material involved residual viable malignancy. These patients routinely did poorly. Twenty-four percent of those residual tumors were found to have no malignancy present and forty-one percent were found to have mature teratoma present. Transformation of malignant embryonal carcinoma to benign immature teratomas has been documented in the literature. Mature teratomas may recur again requiring repeat surgery for residual localized tumor. With all the improvements in chemotherapy, a 20% residual tumor incidence following initial chemotherapy and followup treatment occurs. Now an investigational drug called epipodophyllotoxin (VP-16) is being tried on refractory cases alone or in varying combinations with other chemotherapeutic agents.

Williams employed VP-16 in 33 patients. Three were found to have partial responses using VP-16 alone, fourteen had complete remission and five were disease free by surgical resection of the residual tumor after treatment. The major toxicity of VP-16 is myelosuppression with hospitalization for infection secondary to myelosuppression in one-third of the cases.

The toxic effect of vinblastin is leukopenia with 30% of patients requiring hospitalization for a temperature greater than 100°F due to infection. Another manifestation of vinblastin toxicity is myalgias which may need narcotic treatment. Some authors are advocating a decreased dose of vinblastin to 0.3 mg/kg to avoid the severe myelosuppression that occurs. Cisplatinum has a reputation for extreme nausea and vomiting but can be ameliorated with adequate prechemotherapeutic regimens involving metoclopromide for nausea and adequate hydration to reduce nephotoxicity. Another less common side effect of cisplatinum is decreased hearing. The toxic effects of bleomycin are fever and chills; and less frequently, but of more serious nature, alopecia, increased pigmentation of the skin, hyperkeratosis, and pulmonary fibrosis. In various chemotherapeutic regimens the addition of doxorubicin at 50 mg/meter^2 every three weeks is used to decrease the episodes of infection occurring from the granulocytopenia.

I would like to spend some time discussing the controversial area of stage 2 disease therapy of nonseminomatous tumors. Orchiectomy is the first step followed by retroperitoneal lymphadenectomy followed by several options. 1) Radiation therapy — This is now used sparingly since most relapses occur at distant sites, radiation impairs the ability to deliver chemotherapy and also has an added carcinogenic risk. 2) Combination chemotherapy and radiation therapy — radiation therapy is not recommended. 3) Combination chemotherapy alone — Some have used chemotherapy initially while others have elected to perform orchiectomy with staging as appropriate and then wait until recurrence before proceeding with aggressive chemotherapy.

The five year survival rate for a stage 2 disease after orchiectomy and retroperitoneal lymphadenectomy is 60% for embryonal cell carcinoma and teratocarcinomas. However, with the use of chemotherapy per Einhorn's recommendation, a 100% cure rate for stage 2 disease is anticipated. Walter Reed Hospital using radiation therapy had an 80% three year disease-free rate with radiation therapy but retroperitoneal lymphadenectomy had the same cure rate. Patients were eliminated who had positive scalene nodes thus decreasing the number of patients with a poor prognosis in that study. Overall chemotherapy appears to be needed in this area until further studies determine better methods to prevent recurrence without the toxicity of chemotherapy. Virgil Wydell treated stage 2 testicular carcinomas and found maintenance therapy showed no significant difference in overall outcome as compared to Einhorn.

CONCLUSION

Testicular germ cell neoplasm treatment has definitely changed from a highly fatal malignancy to one of the most curable malignancies today. The use of modern chemotherapy, in particular, has given marked increase in cure rate for testicular carcinoma cases. There is now an 80-100% cure rate for stage 1 disease and a 40-80% cure rate for stage 2 and 3 for 2 years. Even refractory testicular tumors have an increasing chance of cure with the VP-16 investigational drug. However, many controversial questions remain in the use of chemotherapy: how many courses do you use for induction of a particular testicular tumor? Which protocol to use? What method of giving the chemotherapy is employed? Should chemotherapy be given over days or as a bolus? The optimal minimal therapy to decrease risk remains to be determined.

Dr. Nawrocki's Diagnosis
Teratocarcinoma of the Testis

DR. BARLOW: Although the classification of testicular tumors is lengthy, the most common tumors occurring in postpubertal males are malignant germ cell tumors. They amount to only 1% of the deaths from malignancy in males but compose 11-13% of all cancer deaths in the 15-34 year age group. As I stated above, most tumors in males tend to be malignant and are largely confined to seminoma which comprises approximately half of the tumors and is often pure, or the nonseminomatous germ cell tumors composed of pure or mixed elements such as embryonal carcinoma, endodermal sinus tumor (yolk sac), choriocarcinoma, or mature or immature teratoma. These constitute the majority of germ cell neoplasms. Multiple sections are often required to discover all the elements present.

Although there is a definite relationship to cryptorchidism since this condition has been found to markedly increase the chance of malignancy compared to a normally descended testis (abdominal being more likely to undergo malignant degeneration than inguinal testes), the cause of this predisposition to malignant degeneration is unclear. Some feel that the testis must be brought into the scrotum before 2 years of age to avoid the predilection for malignancy. Others feel six years of age is an upper limit for orchiopexy in prevention of testicular neoplasia. Others have noted an increased incidence of synchronous or metachronous germ cell neoplasm in the contralateral testis of men with cryptorchidism. This suggests there may be a factor producing malignancy in these patients not totally explained by the position of the testis alone.

Another interesting point in the pathogenesis of testicular neoplasms has been the finding of intratubular germ cell neoplasm (carcinoma in situ) a finding recognized near known testicular germ cell neoplasms, some years ago, but now recognized in cryptorchid testes, in the contralateral testis of cryptorchid men, and in testicular biopsies from infertile men. 50% of patients with intratubular germ cell neoplasia will progress to testicular neoplasm. This finding certainly lends support to attempts to train young men, especially those at high risk for testicular neoplasia, to employ self examination of the testes analogous to self examination of the breast in women.

A few generalizations about testicular tumors can be made.

1. The histologic diagnosis of neoplasm based on multiple sections is important because seminomas respond very well to radiation but the nonseminomatous germ cell tumor may require combination chemotherapy if beyond stage IA (confined to the testis).
2. Metastases are most common in the retroperitoneal lymph nodes near the kidney and the lung. Although radiation is successful for seminomas, retroperitoneal dissection and/or chemotherapy is necessary for the nonseminomatous germ cell neoplasms. Inguinal lymph node metastases are rare unless the scrotum has been transgressed by surgery. This latter point is one important reason why testicular neoplasms should be removed by orchiectomy with a long segment of spermatic cord through an inguinal incision. If a transcrotal approach is used, the vascular drainage of the scrotum is now exposed to tumor invasion. A biopsy across the scrotum is to be avoided for the same reason and because a definitive diagnosis of the true nature of the neoplasm cannot be determined from a small biopsy.
3. Teratomas in postpubertal young men can metastasize even if all the elements are mature histologically. This is in contrast to similar lesions of the ovary or in the testes of prepubertal males in whom the lesion is benign. Immature teratoma has a malignant potential at any site.
4. In prepubertal boys only two tumors are common. One is an endodermal sinus tumor seen in boys (under 3 usually). It is malignant but does have a better prognosis than an identical lesion in a postpubertal male. The second is a mature teratoma which in contrast to the same neoplasm in a postpubertal man has no malignant potential.
5. In men over 50, germ cell tumors of any kind are rare. The most common lesion in elderly men is a large cell lymphoma which has a poor prognosis.
6. Radical orchiectomy may cure 80% of stage I lesions of any variety.

I would like to close with a few remarks about tumor markers in testicular neoplasms (AFP and BHCG).

BHCG, the glycoprotein secreted by the syncytiotrophoblast of the placenta in normal pregnancy is utilized in followup of hydatidiform mole and choriocarcinoma in women and in some embryonal carcinomas of the testis. It is also elevated in some (about 10%) of seminomas which contain scattered syncytiotrophoblastic cells. Unfortunately, BHCG is not elevated in patients with the other elements of testicular neoplasms such as teratoma or endodermal sinus tumor.

AFP is a fetal protein which can be elevated in patients with endodermal sinus tumor or embryonal carcinoma but is not elevated in patients with teratoma, seminoma or choriocarcinoma.

Both markers should be obtained preoperatively in testicular neoplasms and a positive test indicates a germ cell tumor of the testis but a negative test does not exclude one. This also applies to retroperitoneal metastases since the presence of teratoma will not be indicated or the tumor burden may be too small to cause elevation of these markers. Also it must be noted that both HCG or AFP may be elevated in carcinomas of other sites such as lung, liver and gastrointestinal tract. Elevation of either of these markers is not equivalent to a histologic diagnosis. In fact, AFP first became popular as a marker for hepatocellular carcinoma.

Lactic dehydrogenase (LD) shows promise as a marker for seminomas or possibly nonseminomatous tumor but more data is needed.

DR. REED: Cryptorchism is responsible for 8-10% of the germ cell tumors of the testis and testicular atrophy from various causes, including mumps, account for another 1-2%. We do not know what the pathogenesis of testicular neoplasm is but it is an important area for research.

One controversial area is whether to treat the mediastinum routinely with x-ray in patients who have intraabdominal disease.

DR. ROBINSON: At a recent symposium I attended, mediastinal radiation therapy was not recommended in patients with seminoma and it was felt that radiation was of no benefit in the treatment of nonseminomatous testicular tumors for any reason.

DR. NAWROCKI: What is your success rate for therapy for testicular malignancy in this institution?

DR. REED: We achieve an 80% complete remission rate. This is similar to Einhorn's data. I would like to add that we use four courses of therapy using his regimen.

DR. ROBINSON: I would like to make several points.

1. If testicular tumor patients relapse it is almost always within the first two years and most patients who suffer relapse will do so in the first year.
2. It must be remembered that 20-30% of patients do not produce tumor markers, even though they have disease. The most helpful way that these markers can be used is when they are positive before surgical resection and subsequently become negative. If the levels of these markers become elevated again, recurrence is a certainty.
3. Whether to treat patients who demonstrate neoplasms in the retroperitoneal nodes is a difficult area but many feel that adjuvant chemotherapy is indicated particularly when five or more lymph nodes are involved or lymph nodes are over 2 cm in size. Patients with this amount of disease show frequent relapses.
4. Certain studies should be performed before the patient is subjected to retroperitoneal lymphadenectomy. A plain chest film will not detect all metastatic disease in the chest. A CT scan or tomographic examination is necessary. There is some argument which of these is better but pleural disease can often be detected on the CT but not on the tomogram.
5. I agree that maintenance therapy after several courses of chemotherapy is no longer required.
6. The problem of what to do with patients who have stage I disease and elevated levels of serum markers before surgery but negative levels after surgery is difficult. Most of these patients will not recur and perhaps waiting before retroperitoneal node dissection may be the wisest course provided close follow-up is performed.

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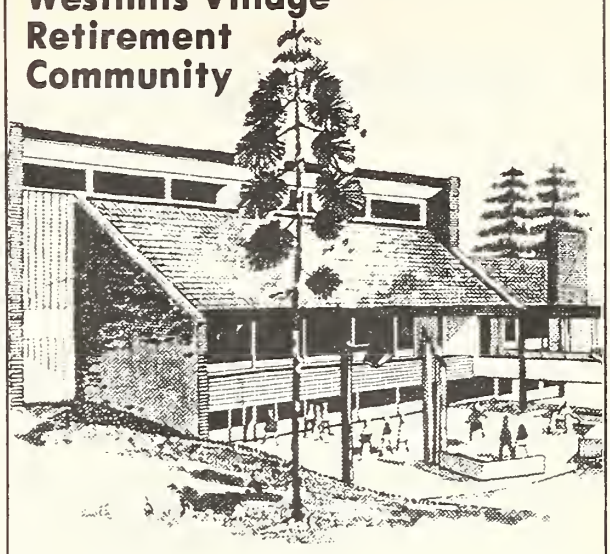

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AAFP Appointments

Richard W. Friess, M.D. of Sioux Falls, SDAFP Delegate, has been reappointed for a one year term to the AAFP Committee on Hospitals. This is his third year on the committee.

Loren H. Amundson, M.D., Chapter Secretary-Treasurer, has been appointed AAFP Alternate-at-Large to the Residency Review Committee for Family Practice.

Congratulations to these members.

Meeting the Needs of Maldistribution*

The University of South Dakota School of Medicine (USDSM) is one of the new medical schools established in the United States since 1960. A traditional two-year basic science medical school from 1907 until 1974, it converted to four-year MD degree-granting status in 1974 and graduated its first MDs in 1977.

Legislation creating this four-year school mandated a "family practice orientation," with the aim of producing family physicians for our rural state suffering specialty and geographic maldistribution.[1]

USDSM followed the pattern of "community-based" schools, relying upon community hospitals and private practitioners for much of its teaching and not managing its own medical center. Because only a few of the graduates of the new school had finished training and begun practice by 1984, it was not feasible to track practice patterns. However, it has been possible to follow the distribution of its graduates into graduate medical education programs and compare the results with published practice data.[2]

An eight-year summary of the distribution of graduates into first-year residencies is shown below. This data is compared with National Resident Matching Program (NRMP) averages for the same period of time.[3]

DISTRIBUTION OF USDSM GRADUATES IN FIRST-YEAR RESIDENCIES

Type of Program	U.S. Graduates (NRMP 8 yr avg) 1977-84	USDSM Graduates (8 yr summary) 1977-84	
	Percent*	Number	Percent*
Family Practice	13	79	22
Internal Medicine	36	97	27
General Surgery	13	31	9
Pediatrics	10	25	7
Obstetrics/Gynecology	6	21	6
Psychiatry	4	6	2
Medical Specialties	1	2	1
Surgical Specialties	3	10	3
Support Specialties	7	19	5
Transitional	7	63	18
	100%	353	100%

* Average percentages rounded.

As the data show, graduates of this new "community-based" medical school have chosen graduate training in specialties appropriate to practice needs in South Dakota.[1] Retention of those in USDSM affiliated programs (28%) and the return of graduates training out of state to South Dakota to practice, can be expected to correct the specialty and geographic maldistribution of physician manpower in the state. This should fulfill the 1974 legislative mandate and hopefully will help provide a continuing stable state funding base for the new school.

Loren H. Amundson, MD
Sioux Falls, S.D.

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Ten Ways To Kill An Organization

1. Don't go to meetings.
2. If you do, go late.
3. If the weather doesn't suit you, don't think of going.
4. If you do attend a meeting, find fault with the work of the officers and members.
5. Never accept an office as it is easier to criticize when you're not responsible.
6. Get sore if you are not appointed on a committee, but if you are, do not attend committee meetings.
7. If asked by the president to give your opinion on some matters, say you have nothing to say.
8. When your mind is made up, don't give the opinions of others your fair hearing.
9. After the meeting, tell everyone how things should have been done.
10. Do nothing more than absolutely necessary, but when other members use their ability to help matters along, howl out that the organization is run by a clique.

"The patient comes first" is the first tenet of the AMA. This reason alone is enough to encourage support of the organization and participation in a group that subscribes to such a worthy philosophy in this day of change, shifting values and mercenary motivation. The AMA Auxiliary is the volunteer arm of the AMA and its members and potential members have a responsibility and a pride in promoting a doctrine that is of the utmost importance to every citizen in the U.S. . . . a matter of life and death.

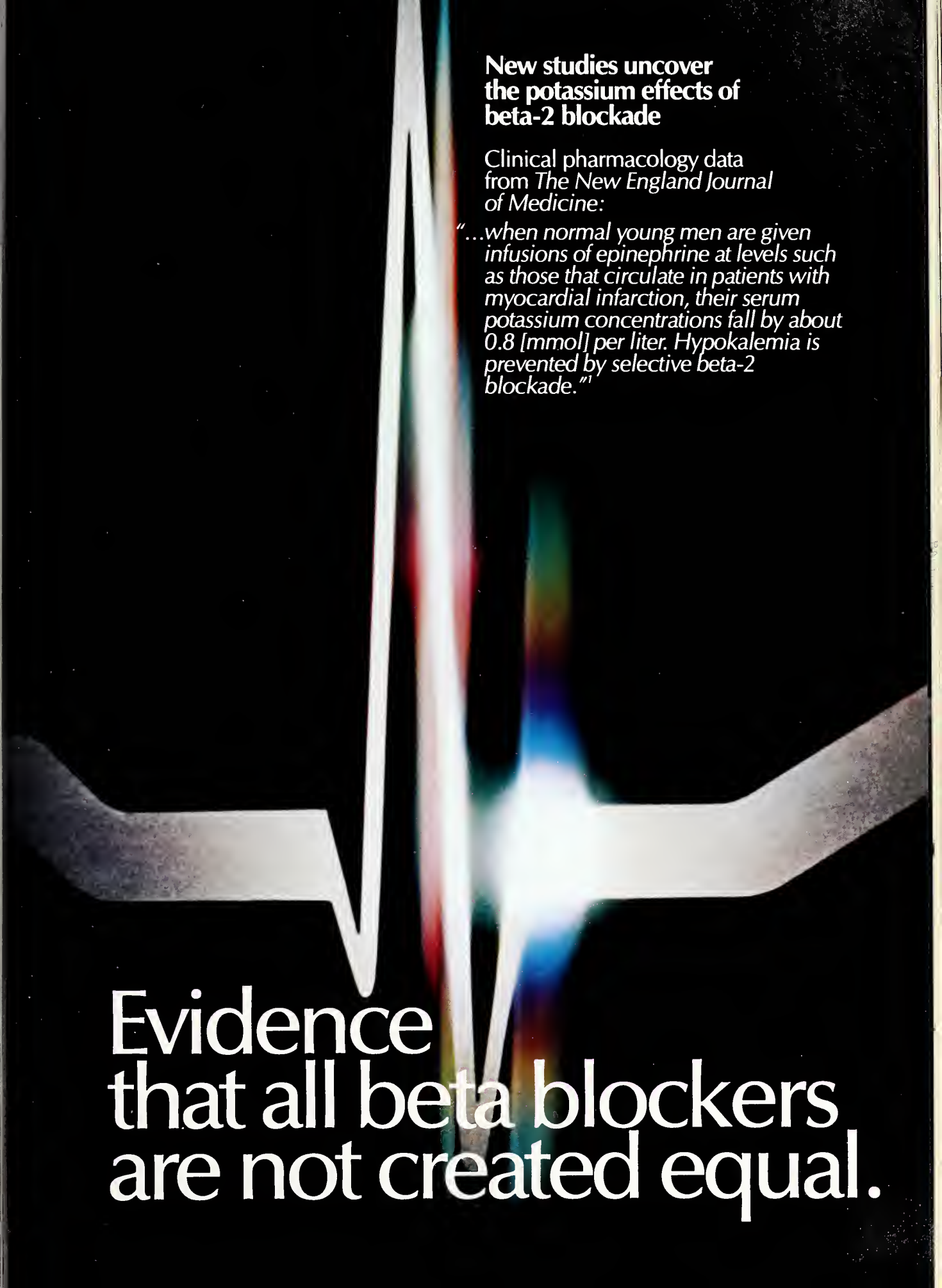
At no other time in history has it been more important that doctors, spouses, and all in the medical profession and field join together to preserve the high quality of care that the people of our country have available today. Government and outside interventions have brought about new procedures, and many more large changes are lurking in the shadows. None of these so-called practical and economic moves have anything to do with the quality of health care for the patient, but rather have everything to do with cost and cost containment.

Through AMA Auxiliary membership, physicians' spouses become a vital part of the health care world. It allows us to work together in a force of 80,000 auxilians to let Americans know that they have the finest health care in the world and that we in the medical family want to make sure they continue to have it. It is our common bond that enables us to pursue our common goal so effectively.

The AMA Auxiliary has a tradition of sixty (60) years of community service, and the organization has changed and grown with the times. Now, facing a future of revolutionary change, unity and commitment to goals are imperative. In recent years, consumer groups in many areas — environment, safety, government — have made a terrific impact. They have made the impact through unified action. Think of what can be done for our goal of quality living when a force of 80,000 knowledgeable, talented, caring physicians' spouses speak with one voice!

People can be divided into three groups:
Those who make things happen
Those who watch things happen and
Those who wonder what happened!!!

Mary Wrage, President
South Dakota State Medical Association Auxiliary



New studies uncover the potassium effects of beta-2 blockade

Clinical pharmacology data from *The New England Journal of Medicine:*

"...when normal young men are given infusions of epinephrine at levels such as those that circulate in patients with myocardial infarction, their serum potassium concentrations fall by about 0.8 [mmol] per liter. Hypokalemia is prevented by selective beta-2 blockade."[1]

Evidence that all beta blockers are not created equal.

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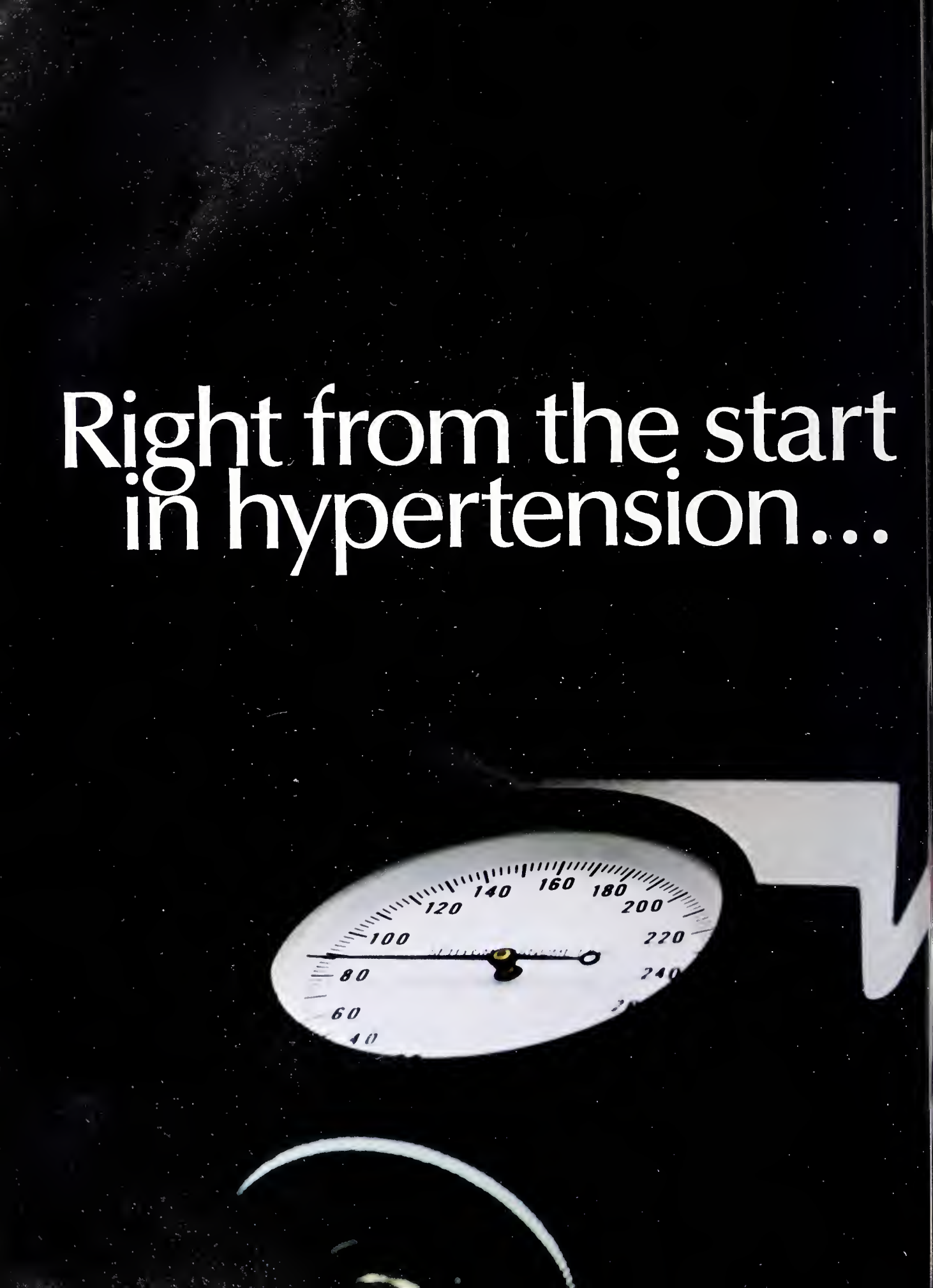

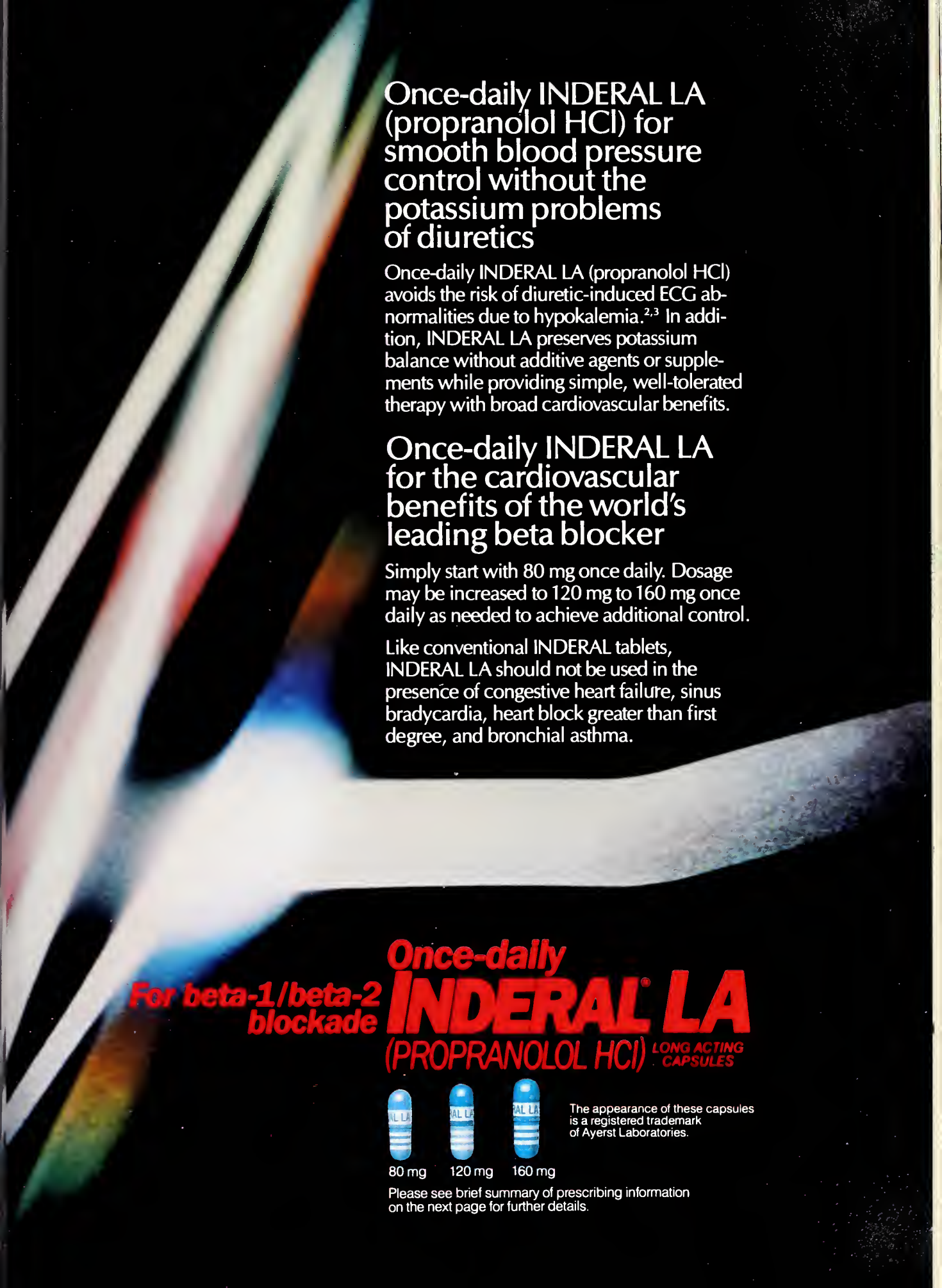

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For beta-1/beta-2 blockade

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Please see brief summary of prescribing information on the next page for further details.

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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION. SEE PACKAGE CIRCULAR.)*

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DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.

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INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension, it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta receptor agonists and its effects can be reversed by administration of such agents, e.g. dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests: Elevated blood urea levels in patients with severe heart disease; elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

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Congenital Cystic Anomalies of the Biliary Tract*

Kenneth Halverson, M.D., FACS†

ABSTRACT

Choledochal cysts are seen most frequently in female children. Although the triad of abdominal mass, jaundice and pain is frequently observed, vomiting and fever are also common. The disorder appears to be more common in the Orient, the largest series being reported from there. One of the two cases presented in detail here is a Native American infant. Problems in diagnosis are discussed, and the evolution of surgical treatment is reviewed.

More than 1000 cases of congenital dilatation of the bile duct have been reported. These are usually referred to as choledochal cysts, although the variant that occurs within the wall of the duodenum is called a choledochocele. The exact mechanism of formation of choledochal cysts is in dispute. Traditional explanations include hypoplasia of segments of the primitive duct, and defective vacuolization of the duct. The possibility has been raised that they may be caused by reflux of pancreatic juice into the common bile duct, resulting from a common channel of the two ducts.[2] Although a classic symptom triad of abdominal mass, pain, and jaundice is frequently observed, fever and vomiting are also commonly present. The majority of patients do not have all three features of the triad.

Choledochal cysts are more common in females than males, and tend to occur early in life. Occurrence in older children and adults has been reported.[13] This raises the question whether all choledochal cysts are truly congenital. Further, there appears to be a disproportionately high incidence in Orientals. Several sizable series of patients with this condition have been reported by Japanese authors. The frequency of choledochal cyst in Native Americans is not known.

The initial classification of choledochal cysts was done by Alonso-Lej,[1] who identified three specific types, all of which were limited to the common bile duct. A fourth type of anomaly has been recognized which involves multiple cysts in other portions of the biliary system. Additional subclassifications and variations have been added which leads one to believe that there are unlimited variations of the condition (Fig. 1).

Normally the common bile duct and pancreatic duct of Wirsung enter the duodenum as a common channel in the ampulla of Vater. Approximately 80% of the population have a common channel. Suda[17] has described two fundamentally different kinds of common channel:

(A) Junction of CBD and PD located in mucosal or submucosal layer;
(B) Junction of CBD and PD below the muscularis propria of the duodenum.

Suda studied autopsy material in 28 cases of congenital biliary atresia and two cases of choledochal cyst. Seventeen of the biliary atresia patients and

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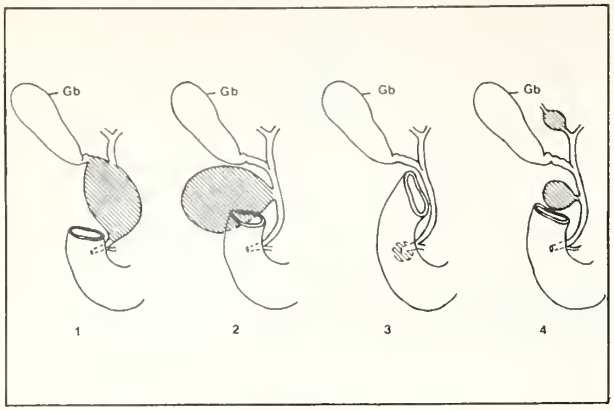

Figure 1
Variations of choledochal cysts. See text for explanation.

both cases of choledochal cyst demonstrated the second (B) anatomical relationship. A control series of thirty-five normal infant patients had the arrangement described in (A) above. (B) seems to be a rare situation, and is distinguished by a well-developed sphincter lying in the submucosal layer, surrounding the common channel distal to the junction of the ducts. Since the intrapancreatic duct pressure exceeds that of the common bile duct, reflux of pancreatic juice into the common bile duct might occur. A report[16] of exceedingly high amylase content in some choledochal cysts gives support to this concept. It has been suggested that biliary atresia may also result from an especially long common channel of the pancreatic and common bile ducts.[17]

Specific preoperative diagnosis of choledochal cyst has usually not been possible. Jaundice in the infant may be due to biliary atresia, or a variety of metabolic and hematologic disorders. The clinical presentation of an abdominal mass, with only minor changes in the liver profile, is compatible with a variety of tumors including Wilm's tumor and neuroblastoma. Mesenteric cysts, polycystic kidneys and various disorders which lead to hepatomegaly may give similar clinical pictures.

Preoperative diagnosis is possible by transhepatic cholangiography (''skinny needle'') if there is dilatation of the intrahepatic bile radicals. Retrograde cholangiography via the ampulla of Vater should be productive, but the procedure is an unlikely choice for infants and small children. Hepatic scan has sometimes been useful, but development of the biliary (Hida) scan should allow highly specific results. Abdominal CT scan and ultrasound are useful in distinguishing the extent and nature of abdominal masses, but share lack of specificity in associating the larger cysts with the biliary tract.

We present two cases of choledochal cyst, one followed for twenty-nine years after surgical resection by Dr. C. B. McVay. The other patient is a child, operated upon in 1982. The cases have in common a massive retroperitoneal cyst associated with minimal jaundice.

Case No. 1

A three year old white female was hospitalized in 1955 because of an abdominal mass. Approximately one year earlier she complained of pruritis and displayed a right upper quadrant mass. There was moderate jaundice and her liver seemed to be enlarged. Her bilirubin was 5 mg/dl and the alkaline phosphatase was elevated slightly. One month later the bilirubin had returned to normal, but the right upper quadrant mass was still palpable. She was seen on the surgery service in April 1955 because of increasing size of the abdominal mass. Intravenous pyelogram was normal. Cholecystogram was nonvisualizing. Total bilirubin was 0.7 mg/dl, and the alkaline phosphatase was within normal limits. The preoperative diagnosis was massive hydrops of the gallbladder, vs. mesenteric cyst. An enormous cystic dilatation of the common bile duct was found in a retroperitoneal location. The duodenum and the head of the pancreas were pushed far to the left. The cystic mass was dissected out of its retroperitoneal position. A filamentous connection measuring 1 millimeter in diameter, which connected the cyst to the duodenum was discovered, and cut, with leakage of bile. This tiny duct was ligated. Further dissection revealed greatly dilated proximal common duct with the gallbladder emptying into it. The mass was resected up to the common hepatic duct, 1 cm. below the junction of the hepatic ducts. The cyst contained 800 ml. of normal appearing bile. A Roux-en-Y anastomosis was made between the common hepatic duct and a limb of jejunum; a T-tube was used to stent the anastomosis. Recovery was uneventful. There were no problems until she reached age sixteen, when she began to have intermittent bouts of upper abdominal pain. Initially, liver studies were normal, but several weeks later she was admitted because of a temperature of 101° F, abdominal tenderness and vomiting. Intravenous cholangiogram failed to visualize the biliary system. An upper GI series was negative, admission bilirubin was 3.6 mg/dl, amylase 32 units, alkaline phosphatase 6.5 units, and SGPT 279 units. She was treated with Ampicillin and had rapid resolution of symptoms. Liver studies were normal when she was dismissed four days later. Pain reoccurred a week later, but there was no temperature elevation and the liver studies remained normal. Since that time, she has had occasional brief, but severe, bouts of epigastric pain but liver studies have been invariably normal. She is now a registered nurse, and states that she is in excellent health and has had no symptoms for several years.

Case No. 2

A five month old Native American female weighing 7 kg was referred from a PHS Hospital on December 20, 1982. There was jaundice in the newborn period, which relented. At the age of four months, she was treated for pneumonia, and was not icteric at that time. She was referred to Sacred Heart Hospital because of vomiting and a palpable abdominal mass. Urinalysis revealed 1 + bilirubin, 0.1 mg urobilinogin and was otherwise normal. Hemoglobin was 15.6 gm/dl, hematocrit 45.3%, white count 15,700 with 20% segmented neutrophiles, 74% lymphocytes, 4% monocytes and 2% eosinophiles. Platelets were normal. Prothrombin time was 24 seconds, with a control of 12 seconds. The PTT was 53 seconds (normal less than 40 seconds). Admitting LDH was 433 units (180-500), SGOT 189 (5-30), alkaline phosphatase 1081 units (50-300), sodium 134 mEq/L, potassium 4.0 mEq/L, bilirubin 4.9 mg/dl, BUN 2 mg/dl, creatinine 0.3/dl, and chest x-ray normal. Flat plate of the abdomen showed displacement of the hollow viscera to the left by a large mass. Intravenous pyelogram was normal except for compression of the right kidney. Abdominal CT scan revealed a massive cystic structure extending from the liver to the pelvis and across the midline (Fig. 2). The preoperative differential diagnosis included mesenteric cyst, choledochal cyst, and ovarian cyst. Exploratory laparotomy demonstrated a huge retroperitoneal cyst displacing the right colon to the midline. The duodenum and head of the pancreas were displaced anteriorly. A small accessory spleen was located in the gastrocolic ligament and was left in place. The cyst was dissected meticulously until it was attached solely to the portal area of the liver. The distal common bile duct could not be identified, and was presumed to be very small. The gallbladder projected from the upper portion of the cystic dilatation, which also involved the common hepatic duct. Right and left hepatic ducts were also dilated. The cyst was removed, including all of the common hepatic duct. A Roux-en-Y hepaticojejunostomy was performed, using single-layer technique, after confirming the identity of the hepatic ducts by cholangiography. A T-tube was not employed. No bile leakage was observed from the Penrose drain. Her postoperative course was complicated by a persistent low-grade fever, eventually attributed to a saphenous phlebitis, secondary to ankle cut-down. This was treated with warm compresses and intravenous Gentamycin with satisfactory resolution. She was dismissed from the hospital ten days postoperatively, gaining weight. At the time of discharge, the total bilirubin was 1.8 mg/dl, alkaline phosphatase 462 units (50-300), LDH 305 (180-500) and SGOT 48 (5-30). She has been well since the operation.

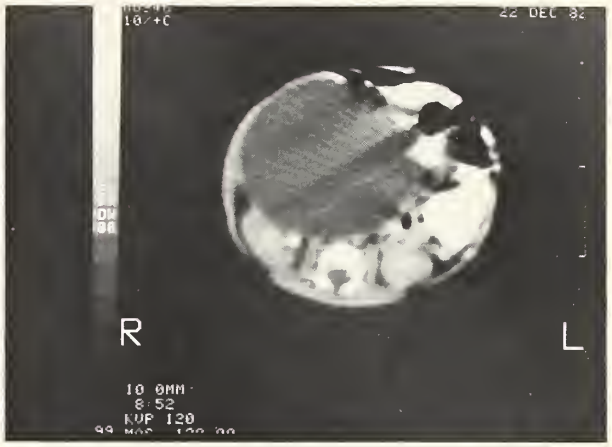

Figure 2
CAT view of fluid-filled mass occupying most of the right abdomen.

Surgical Treatment

In the early experience with choledochal cysts, the usual treatment was some kind of internal drainage of the cyst. Fonkalsrud,[8] as recently as 1973, advocated cystoenterostomy. It was felt that the technical difficulties in resecting the cyst could be disastrous, and that resection should only be done if drainage was unsuccessful. External drainage was occasionally utilized, but was generally unsatisfactory. Patients who had internal drainage were subject to recurrent cholangitis and obstructive problems. Because the patients did so poorly, it became the feeling that the cysts should be removed. Anastomosis of the duodenum to the hepatic duct, or a remnant of the cyst was usually done. This technique resulted in a much improved outcome, but there was still considerable trouble with recurrent cholangitis.

The preferred treatment at this time is a Roux-en-Y anastomosis of the hepatic duct to the jejunum, subsequent to excision of the cyst. Complications following this technique are unusual, and the majority of patients treated have no subsequent problems. The chief complication continues to be cholangitis, usually associated with stricture at the site of the anastomosis. If the proximal hepatic radical is very small, a remnant of the cyst may be used to accomplish a satisfactory anastomosis. Cholecystectomy should be performed in all cases to avoid the possibility of subsequent cholecystitis.

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J. Michael McMillan, M.D., Sioux Falls, was elected to the board of directors of the American Cancer Society at the annual meeting of the house of delegates in New York.

A member of the American Cancer Society house of delegates since 1979, Dr. McMillan is past president of the board of directors for the South Dakota division. He also serves as chairman of the American Cancer Society field service committee.

* * * *

Charles P. O'Brien, M.D., Sioux Falls, has been elected to serve as college governor for the state of South Dakota by the American College of Cardiology's Board of Trustees.

Dr. O'Brien is currently in private practice of cardiology in Sioux Falls.

* * * *

Three Central Plains Clinic physicians recently completed all requirements for certification by the American Boards of their respective specialties: **Marc A. Green, M.D.,** certified by the American Board of Dermatology; **Robert A. Nelimark, M.D.,** American Board of Oncology; and **John Sall, M.D.,** American Board of Urology.

* * * *

Dennis D. Knutson, M.D. and **Eugene O. Hoxtell, M.D.,** dermatologists in Sioux Falls, have recently been elected to membership as Fellows of the American Society of Dermatopathology. Specialty certification in both dermatology and dermatopathology are necessary qualifications for fellowship status.

* * * *

Dr. Donald Weatherill has been elected president of the Methodist Hospital Medical Staff for 1985. **Dr. Charles Flohr** was elected president-elect and **Dr. Ray Birkenkamp,** secretary. All three physicians practice in Mitchell.

* * * *

Dr. Bernard Gerber, Aberdeen, was elected vice president to the board of directors of the Foundation for Mental Health.

Thomas J. Kass, M.D. has joined his father Dr. Joseph Kass in his family practice in Rosholt. Dr. Tom received his medical degree from the Hanover Medical School in West Germany in 1982, and completed a residency in North Dakota this year.

* * * *

Marc E. Boddicker, M.D., dermatologist, has recently started practicing in Rapid City. Dr. Boddicker, a native of Iowa, graduated from the University of Iowa College of Medicine in 1980. He served internships in LaCrosse, Wisc. and Iowa City, Iowa; and took additional training at Tufts University in Boston.

Dr. Geoffrey Cottom, 87, died in Sioux Falls recently.

Dr. Cottom was born April 21, 1897 in Rock Rapids, Iowa and attended Rock Rapids grade school. In 1910, he came to Sioux Falls and graduated from Washington High School in 1917. He then served in the Calvary in Troop B. He attended the University of South Dakota and received his medical degree in 1926 from the University of Iowa. He served his internship and residency in Chicago hospitals.

He worked as an assistant at Harvard University and as an associate surgeon at Miller Hospital Clinic in St. Paul, Minnesota, before coming to Sioux Falls in 1931. He began his practice in 1932 and a year later began a 17 year partnership with Dr. S. A. Donahoe. He then pursued his own surgery practice for the next 20 years, specializing in brain injury surgery. In 1949, he headed the surgical team which performed the first lung removal operation.

Dr. Cottom served as secretary for the Seventh District Medical Society and the State Medical Association. He also served as president of Sioux Valley Hospital and McKennan Hospital. He was a life member of the American College of Surgeons and the International College of Surgeons.

He married Dorothy Edmisou Sept. 11, 1933 in Sioux Falls. She died in May 1972. On Sept. 24, 1977, he married Lowene Pay.

Robert VanDemark, M.D., Sioux Falls, was selected honorary chairman for the Easter Seals Society board of directors at the South Dakota Easter Seal Society annual convention in Pierre recently.

* * * *

The Platte Hospital board of directors hosted an open house in honor of **Dr. E. F. Kalda** of Platte in honor of his 35 years of service to the community.

* * * *

Dr. William O. Hanson, family practice physician in Huron, has accepted the position of hospice medical director at Huron Regional Medical Center. The Hospice Program provides care to terminally ill patients and their families in their home setting.

* * * *

The University of South Dakota School of Medicine recently presented **Dr. Beth Johnson,** Sioux Falls pathologist, with a Distinguished Service Award. Dr. Johnson is a clinical assistant professor in both the department of laboratory medicine and the department of anatomy.

* * * *

Dr. Richard G. Belatti, Sioux Falls, was elected president-elect of the South Dakota Lung Association at their annual meeting.

* * * *

Merritt G. Warren, M.D., Brookings, has agreed to serve as Honorary Chairman of the "1985 Mother's March Against Birth Defects" sponsored by the March of Dimes.

* * * *

The 1984 Larry Annis Distinguished Service Award was awarded to **Dr. Eberhard Heinrichs,** director of the student health service at the Univ. of South Dakota, by the Dakota Days Committee.

Dr. Heinrichs, a native of Berlin, Germany, came to Vermillion in 1977 and was instrumental in creating new programs, hiring a new staff and obtaining new equipment for the re-established student health services.

The University of South Dakota School of Medicine recently recognized two faculty members. Faculty Recognition Awards were presented to **Dr. Stephen Maks,** clinical assistant professor of internal medicine from Fort Pierre, and **Dr. Myron Jerde,** clinical associate professor of internal medicine from Rapid City.

* * * *

Dr. Margaret Devick, a Canton family physician, was recently presented the Sandoz Award. While completing her third year of residency training at the Sioux Falls Family Practice Residency Program, Dr. Devick was selected as being the resident who contributed the most to the undergraduate teaching of USD medical students. The Sandoz Award is sponsored by Sandoz Pharmaceuticals of New Jersey.

* * * *

Dr. Paul K. Aspaas, Dell Rapids, was presented with the Lions Clubs International Foundation Award, for a lifetime of personal and professional involvement in the community.

* * * *

Dr. Willis F. Stanage, a Yankton pediatrician, has been named professor and chairman of the department of pediatrics and adolescent medicine at the USD School of Medicine.

Dr. Stanage, a board certified pediatrician, received his B.S. degree from USD School of Medicine and his M.D. degree from the University of Nebraska College of Medicine in 1951.

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The American Diabetes Association selected new officers for 1984-85, which include **J. Michael McMillin, M.D.,** Sioux Falls, president and **Tom Gaeckle, M.D.,** Sioux Falls, 2nd vice president. Other board members include: **R. G. Nemer, M.D.,** Gregory; **Fred Lovrien, M.D.,** Sioux Falls; **William Quick, M.D.,** Yankton and **Michael Pekas, M.D.,** Sioux Falls.

* * * *

Anthony Petres, M.D., Salem, and his office nurse for 19 years, Mrs. Ruth Lund, were honored by the Spencer Lions Club in recognition of their many years of service to the community. Each received a plaque which was presented to them at a special banquet.

* * * *

William W. Quick, M.D., Yankton Endocrinologist, has been elected president-elect of the American Association of Diabetes Educators for 1984-85. He has held the offices of vice president and treasurer of the national organization of health professionals involved in teaching diabetic patients how to manage their disease.

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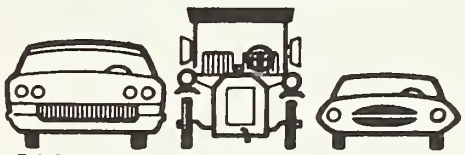

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February

Conference on Rural Health, 1985, Sheraton Galleria Hotel, Bismarck, ND, Feb. 27-Mar. 1. Contact: Jean Rebenitsch, UND, Dept. of Fam. Prac., 221 S. 4th St., Grand Forks, ND 58201.

March

Risky Business — Fifth Annual Health Policy Conference. Washington Hilton Hotel, Washington, D.C., March 11-13. Contact: AHPA, 1110 Vermont Ave., N.W., Ste. 950, Washington, D.C. 20005.

Advances in Leukemia and Lymphomas, MGM Grand Hotel, Reno, NV, Mar. 14-16. Contact: LSA Med. Conf., 733 Third Ave., New York, NY 10017. Phone: (212) 573-8484.

Topics in Clinical Medicine, Holiday Inn City Centre, Sioux Falls, SD, Mar. 29-30. Contact: Central Plains Clinic, Bus. Office, 2727 S. Kiwanis, Sioux Falls, SD 57105.

April

Annual Ophthalmology Specialty Course: Glaucoma, Holiday Inn Downtown, Minneapolis, MN, Apr. 1-2. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Partners in the Management of Addictive Diseases, Ritz-Carlton/Buckhead, Atlanta, GA, Apr. 10-13. Fee:$325. 20 hrs. Category I credits. Contact: U.S. Journal Training, Inc., 2119-A Hollywood Blvd., Hollywood, FL 33020. Phone: 1-800-327-1295.

Allergy and Clinical Immunology, Mayo Mem. Aud., U. of Minn., Minneapolis, MN, Apr. 11-13. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Eating Disorders, Earle Brown Ctr., U. of Minn., St. Paul, MN, Apr. 12-13. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Colorectal Problems for Primary Care, Hyatt Regency Hotel, Minneapolis, MN, Apr. 12-13. AMA Category I hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

The Hand Wound and Its Treatment, Southampton Princess Hotel, Southampton, Bermuda, Apr. 15-17. Fee: $400. 18 hrs. AMA Category 1 credits. Contact: Am. Soc. for Surgery of the Hand, 3025 S. Parker Rd., Ste. 65, Aurora, CO 80014. Phone: (303) 755-4588.

Practical Cardiology, 8th Annual Update, Abbott Northwestern Hospital, Minneapolis, MN, Apr. 19-20. Contact: Cheri Galbraith, RN, Ed. Coord., Minneapolis Heart Institute, 2545 Chicago Ave., S., Ste. 700, Minneapolis, MN 55404. Phone: 1-800-582-5175.

35th Annual Symposium on Anesthesiology, Westin Crown Center Hotel, Kansas City, MO, Apr. 19-21. Fee: $225. 15.5 hrs. AMA Category I & 14 hrs. AAFP credits. Contact: Jan Johnston, Off. of Con't. Ed., U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

11th Annual Family Practice Symposium, Battenfeld Aud., U. of Kansas Med. Ctr., Kansas City, KS, Apr. 24-25. AMA Category I hrs. available. Contact: Jan Johnston, Off. of Con't. Ed., U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

29th Annual Symposium on Infectious Disease, Battenfeld Aud., U. of Kans., Apr. 26. CME credit hrs. available. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th and Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Annual Pathology Symposium, Rieke Aud., U. of Kans., Apr. 27. CME credit hrs. available. Contact: Jan Johnston, Off. CME, U. of Kansas Medical Center, 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

National Conference on High Blood Pressure Control, Palmer House Hotel, Chicago, IL, Apr. 29-30. Fee: $165.00. CME credit hrs. available. Contact: Conference Headquarters, 2121 Wisconsin Ave., Washington, DC 20007. Phone: (202) 944-3176.

May

What's New in Diabetes, Battenfeld Aud., U. of Kans., Kansas City, KS, May 1. 7.5 hrs. AAFP & AMA Category I credits. Contact: Jan Johnston, Off. of CME, Univ. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Health and Addiction, St. Paul Hotel, St. Paul, MN, May 2-3. CME credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Antiviral Therapy, Radisson Univ. Hotel, Minneapolis, May 3. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Technological Advances in Respiratory Care, Hilton Plaza Inn, Kansas City, MO, May 9-10. 11 hrs. AAFP & AMA Category 1 credits. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Heart Attack Prevention, Wilder Forest, Marine on St. Croix, MN, May 19-20. CME credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

June

The Eighth Annual Black Hills Seminar on Advances in Clinical Pediatrics, Sylvan Lake Resort, Custer, SD, June 19-21. Contact: Lawrence R. Wellman, M.D., Prog. Coord., USD School of Med., P. O. Box 5039, Sioux Falls, SD 57117-5039. Phone: (605) 333-7178.

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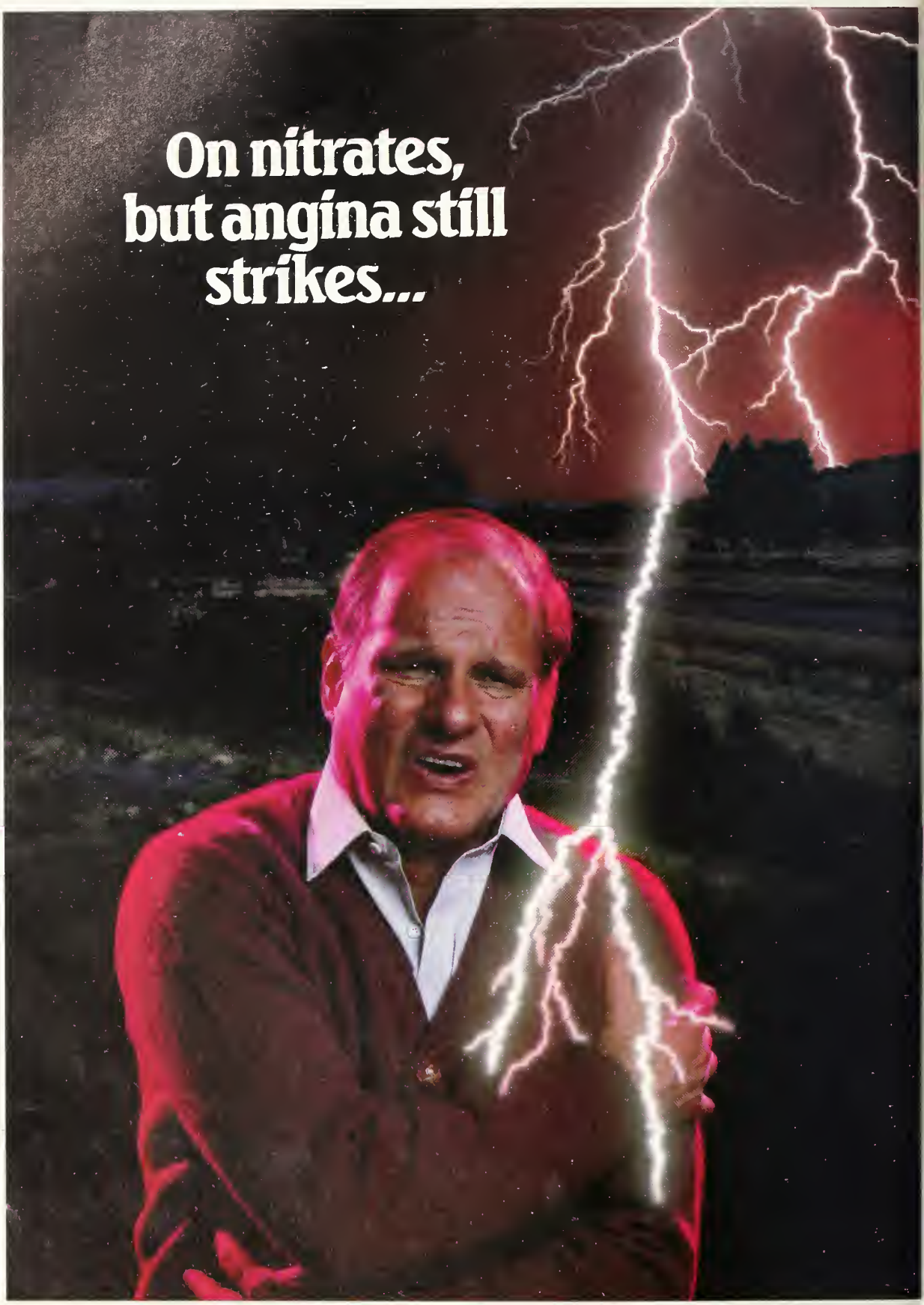
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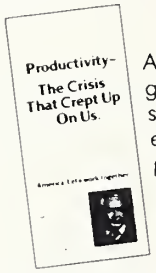

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SOUTH DAKOTA JOURNAL OF Medicine

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USD School of Medicine
Myocardial Infarction in Young Adults —
Etiology, Prognosis, and Follow-Up

The American Health Care Industry: Where
We've Been, Where We're Going

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed:

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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Twenty-Eight Year Old Caucasian Female With Passage of Mucoid Material in Urine

Timothy J. Wolter, M.D.*
Eric Rolfsmeyer, M.D.†
Discussers

John F. Barlow, M.D.‡
Editor

Case #1037062 (84-1032)

This 28 year old Caucasian mother of two was admitted to Sioux Valley Hospital for evaluation of passage of mucoid material in the urine.

One year prior to admission the patient had had a urinary tract infection which responded to antibiotics. At this time she began to note the passage of gray mucoid material which varied in size, but was unassociated with burning dysuria or nocturia, symptoms which were present during her single urinary tract infection. She had had no other urinary symptoms and no history of stones. The patient was a nonsmoker. The patient had had two cesarean sections with two living female children the oldest of which was four. There was no significant history of other hospitalizations or illnesses or significant symptoms on review of systems. The patient had seven weeks span between menstrual cycles which were otherwise within normal limits. There had been no anorexia, weight loss, or gastrointestinal symptoms. Even on repeat history there was only one episode of abdominal pain recalled by the patient.

PHYSICAL EXAMINATION: Well developed, well nourished woman, temperature 37°C, pulse 88/min and regular, blood pressure 110 systolic and 60 diastolic, respirations 24/min. Examination of the head and neck was unremarkable. The lungs were clear to auscultation and percussion. The heart was within normal limits of size without abnormal sounds or murmurs. The abdomen showed no palpable organs, spasm, tenderness, or masses. There was a midline suprapublic scar from the previous caesarian sections. Pelvic examination showed a normal vulva and cervix. There were no adnexal masses. Neurologic examination was within normal limits.

A cystoscopy revealed a reddened area of granulation tissue with a central crater from which mucus was exuding in the posterior dome of the bladder. The cystoscopist thought there was a lesion extrinsic to the bladder. Bilateral retrograde pyelograms and cystograms were within normal limits. A proctoscopy was within normal limits. A chest film and cytogram were normal. Upper gastrointestinal series and barium enema revealed an extrinsic mass with compression of the cecum. The terminal ileum and colon were otherwise unremarkable.

LABORATORY DATA: Urinalysis — straw colored, clear, specific gravity 1.008, pH 8.0, negative for protein, glucose, bilirubin and hemoglobin; ketones 1+; sediment 1 to 3 leukocytes per high power field; hemoglobin 13.8 gm/dl, hematocrit 41 vol/dl with normal red cell indices, total leukocyte count 7.2 × 10^9/L with a differential count of 70% segmented neutrophils, 3% neutrophilic bands, 21% lymphocytes, and 6% monocytes. Platelet count 280 × 10^9/L. The red cells and platelets were unremarkable on the peripheral smear. A prothrombin time and partial thromboplastin time were within normal limits. Plasma sodium 144 meq/l, potassium 4.0 meq/l, chloride 109 meq/l, CO_2 content 31 mm/l. Lactic dehydrogenase (LDH, LD), alkaline phosphatase, aspartate aminotransferase (SGOT, AST), total bilirubin, total protein, calcium, phosphorus, glucose, blood urea nitrogen, creatinine, uric acid and cholesterol were within normal limits. A urine culture revealed Escherichia coli (count colony 75 × 10^3/ml) sensitive to amikacin, cephalothin, cloramphenicol, gentamicin, nalidixic acid, nitrofurantoin, tobramycin, and trimethoprim sulfamethoxazole and resistant to ampicillin, carbenicillin, kanamycin, and tetracycline; Staphylococcus epidermidis (colony count 50 × 10^3/ml) sensitive to clindamycin, erythromycin, oxacillin, penicillin, ampicillin, cephalothin, gentamicin, tetracycline, cloramphenicol, trimethoprim sulfamethoxazole, and vancomycin.

An operation was performed.

DR. WOLTER: This is an unusual case in that mucous in the urine is a rare presenting complaint. It is also a confusing case in that it is difficult to tell

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which organ system is primarily involved.

Summarizing the case I feel that these are the salient points:

1) This is a young patient in generally good health.
2) Patient reports mucus in her urine.
3) A lesion was seen in the bladder, specifically in the posterior apex.
4) Patient has a history of urinary tract infection.
5) A lesion was suspected extrinsic to the bladder.
6) Laboratory and radiographic studies including 12 panel, barium enema, upper gastrointestinal series, retrograde ureterograms, all normal except for a filling defect in the cecum interpreted as extrinsic.
7) Normal pelvic examination and proctoscopy.

A poorly defined lesion of this sort could be of gastrointestinal, female reproductive, or urinary tract origin; and be caused by any of a number of pathological processes. I will deal with some of the less likely possibilities first proceeding to the more plausible diagnoses.

The first possibility I will entertain will be that of an abscess of some sort. This patient has had two cesarean sections, one 4 years previously and one more recently (exactly when is not specified). The posterior dome of the bladder is not infrequently damaged at the time of operation and I suppose one could postulate a local abscess or inflammatory reaction of some type secondary to surgery. Periappendiceal abcess would also be a possibility.

Another way an abscess could be implicated would be if a pre-existing urachal cyst were to become infected. The urachus is an embryologic structure formed from the ventral urogenital sinus and extending from the umbilicus to the apex of the bladder. The urachus generally becomes fibrosed and forms the middle umbilical ligament. Occasionally the lumen of the urachus remains entirely patent in which case urine will drain from a fistula at the umbilicus. If the urachal lumen is partially occluded, a suprapublic cyst may form. These can become infected and can dissect along the course of the middle umbilical ligament with rupture into the apex of the bladder. This is not a common occurrence, and urachal cysts themselves are pretty rare. One series reported 4 cases out of some 32,000 autopsies.[17] In general an abscess of any type seems unlikely here. The patient has a chronic history without fever, chills or weight loss. The urinalysis is not dramatic nor is leukocytosis or abdominal pain present.

Another possibility is inflammatory bowel disease, specifically Crohn's disease with formation of an enterovesical fistula. Fistulae of this type occur in about 5% of all patients with Crohn's disease, usually between the ileum and the bladder. Other types of fistulae can also be seen, of course, including enterocutaneous and enterovaginal. The early symptoms of an enterovesical fistula are dysuria, frequency, and suprapubic discomfort. There are frequent urinary tract infections as would be expected. Later symptoms include pneumaturia and passage of fecal material. Radiographic studies of the gastrointestinal and urinary tracts will often fail to show an enterovesical fistula. On cystoscopy a lesion such as that seen in this case may be present.

While Crohn's disease is not uncommon, particularly in this age group, there seems to be little else to support the diagnosis. The usual presenting complaints of abdominal pain and diarrhea are not present nor is there any weight loss, anemia, skin changes etc. Most importantly there was no evidence of Crohn's disease on proctoscopy or on barium enema which visualized the colon and terminal ileum. No mention is made of a small bowel series so disease confined to a small area of the ileum remains a possibility. If Crohn's disease were the diagnosis then the mass extrinsic to the bladder would have to be presumed to be inflammatory. This seems inconsistent with her lack of abdominal symptoms.

The extrinsic mass could be neoplastic, either a primary bladder neoplasm with extravesicular growth or some other neoplasm eroding into the bladder.

In this age group a gynecologic neoplasm, ovarian to be more specific, would be a possibility. Several of the ovarian tumors are mucus producing such as mucinous cystadenoma or mucinous cystadenocarcinoma. These tumors are cystic and usually grow to large size before invading adjacent organs. Tumors of this type often present with symptoms related to their size such as increasing abdominal girth or urinary frequency. They should be palpable on pelvic examination. In this case the pelvic examination is normal. Furthermore, the patient has had two cesarean sections in the past 4 years, one would hope that any abnormality of the ovaries would have been noted at that time.

An intestinal neoplasm of some sort should be considered. Adenocarcinoma of the small bowel is rare and unlikely to present with erosion into the bladder. Adenocarcinoma of the colon is rare but non-existent in this age group but would seem to be ruled out by the normal barium enema which did appear to show a mass in the vicinity of the cecum raising the question of a lesion of the vermiform appendix.

There is an entity called mucocele of the appendix

which is thought to be due to chronic obstruction of the appendiceal lumen. A distended mucus filled appendix may result in symptoms similar to acute appendicitis and a mass on barium enema could be present. One series of 50,000 surgical and autopsy specimens showed an incidence of benign mucocele of 0.2%.[15] If a mucocele of the appendix were to communicate with the bladder, it would explain this case quite well, but benign mucocele has not been described as doing this.

Adenocarcinoma of the appendix is another possibility. These tumors are of two types with approximately equal incidence. One is of the typical colonic type, the other has more mucus producing cells and is sometimes referred to as malignant mucocele. Adenocarcinoma of the appendix is not common. The 50,000 case study referred to earlier gave an incidence of 0.09%. Another series described it in 1 in 4300 surgically removed appendices.[20]

Adenocarcinoma is the second commonest malignancy of the appendix, being outnumbered about 10:1 by carcinoid tumors. One series of 24 patients did describe 3 cases of adenocarcinoma of the appendix under age 30.[2] The diagnosis is rarely made pre-operatively. I was unable to find any reports of invasion of the bladder by adenocarcinoma of the appendix, although one case of a fistula to the right common iliac artery was reported. The malignant mucocele type of adenocarcinoma is reported to rupture in 25% of cases producing peritoneal implants of mucus producing material or so-called pseudomyxoma peritonei.

A final type of lesion to be considered would be a primary tumor of the bladder. The overall incidence of all bladder cancers is 8 per 100,000 population but the three to one male to female ratio and increasing incidence with advancing age make bladder tumors in women under 40 quite rare.

The large majority of bladder tumors are either transitional cell carcinomas, squamous cell carcinomas or undifferentiated carcinomas, all of these tend to present with hematuria and to initially spread superficially. Extensive extravesicular growth of these lesions is usually seen only in advanced lesions and only with intravesical growth. There are an obvious variety of benign and malignant tumors of mesenchymal origin; sarcomas, fibromas, teratomas, etc. These are rare, perhaps 0.5% of all bladder tumors, but do tend to occur in a younger age group and show earlier extravesicular growth. With the possible exception of teratoma, none would be likely to produce mucus.

One final tumor to consider would be adenocarcinoma of the bladder. This is an unusual lesion making up 1 to 2% of all bladder tumors. These are mucus producing lesions; in fact, they have been reported to present with mucus in the urine, although hematuria would be more typical.[18] Adenocarcinoma has been reported to arise from urachal remnants in the apex of the bladder.

Further Evaluation

If a small bowel series has not been done it would be desirable to do so to rule out localized Crohn's disease. Abdominal computer tomogram (CT) or ultrasound would probably not be helpful. Laparoscopy to rule out ovarian lesions might be considered if there was doubt regarding the pelvic examination. Ultimately, however, this patient needed laparotomy, as essentially all the entities in the differential diagnosis are surgical lesions and the above suggested procedures might not be necessary.

Dr. Wolter's Diagnoses
Adenocarcinoma Arising Either from a Urachal Remnant or From the Vermiform Appendix with Subsequent Invasion of the Bladder.

DR. ROLFSMEYER: I was asked to see the patient because the urologist, Dr. R. C. Johnson, noted a fistula in the posterior dome of the bladder on cystoscopy. We entertained a differential diagnosis similar to that mentioned by Dr. Wolter. Our first choice was inflammatory disease of the small bowel (Crohn's disease). The barium enema examination showed only a 2-3 cm small filling defect at the tip of the cecum. There was reflux of barium into the small bowel revealing no small bowel inflammatory disease. We then proceeded to laparotomy with a preoperative diagnosis of periappendiceal abscess eroding into the bladder. Dr. Johnson performed a cystoscopy and catheterized both ureters at this time. An exploratory examination of the abdomen revealed no significant abnormality except at the tip of the cecum which was pulled down over the uterus and attached to the posterior dome of the bladder. We detached the cecum and resected it. Material was sent for frozen section and a diagnosis of adenocarcinoma was rendered. We then proceeded with a right colon resection and resection of the dome of the bladder. Indurated material attached to the uterus was sampled and found to be benign.

DR. BARLOW: We received a segment of gastrointestinal tract including a 7.5 cm length of terminal ileum and 24 cm length of cecum and ascending colon which were unremarkable. A short segment of resected cecum containing the appendix was received separately. In the region of the appendix, which was almost totally obliterated, was a $2 \times 2 \times 1$ cm red-brown papillary firm lesion. Microscopic sections from the area showed a well differentiated mucus secreting adenocarcinoma which penetrated

through the bowel wall and into the bladder through a fistulous tract. Pools of mucin and scattered entrapped glands were seen throughout this tract (Fig 1). One of 10 lymph nodes from the colon mesentery showed metastatic carcinoma. The origin of the tumor was in the region of the appendix which was destroyed. The tumor could have arisen from the appendix or adjacent cecum.

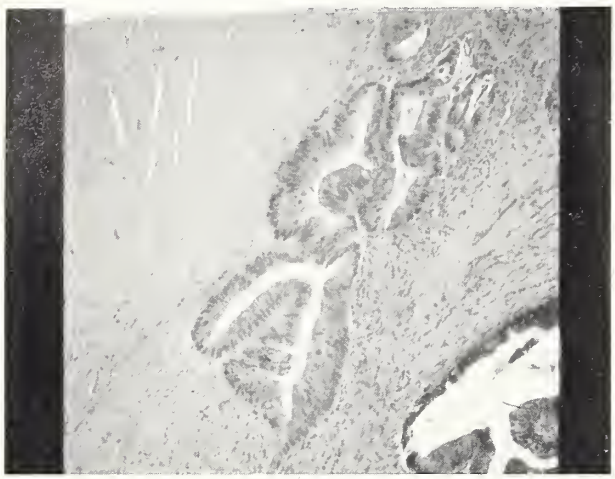

Figure 1
Neoplastic glands from appendiceal adenocarcinoma infiltrating into bladder wall.

FINAL ANATOMIC DIAGNOSIS WELL DIFFERENTIATED MUCUS SECRETING ADENOCARCINOMA ARISING IN REGION OF APPENDIX AND INVADING BLADDER WALL.

Adenocarcinoma anywhere in the gastrointestinal tract is certainly an unusual lesion for this patient's age group and the histology shows a much more well differentiated pattern than the usual colonic adenocarcinoma. It arose in the area of the appendix and is typical of malignancies arising in this structure. I believe we should review the epithelial neoplasms of the mucosa of the appendix and their relationship to mucoceles of the appendix and pseudomyxoma peritonei.

Higa et al[1] reviewed epithelial mucosal neoplasms of the appendix and reevaluated the term mucocele of the appendix. This entity is characterized by much distention of the appendix which is filled with mucus. Mucocele can occur from simple obstruction of the proximal appendix but most instances is due to epithelial neoplasms which Higa divided into three groups:

1. **Mucosal Hyperplasia Focal or Diffuse —** There were 18 cases (5 males and 13 females), 16 of 18 being older than 45 years. All of the cases were found incidentally at surgery and associated with other intraabdominal pathology including 5 adenocarcinomas of the colon and one mucinous cystadenoma of the ovary. The appendices showed no gross abnormality but microscopically the mucosa of the appendix showed hyperplasia of mucus secreting epithelium similar to that seen in a mucosal hyperplastic polyp of the colon. There were no peritoneal implants and followup demonstrated no recurrences.
2. **Mucinous Cystadenoma —** There were 46 cases (15 males and 31 females) 32 of whom were over 45 years of age. Thirty-four were unsuspected findings at surgery for other neoplastic and nonneoplastic conditions including 9 adenocarcinomas of the large bowel. Five cases were detected as filling defects in the cecum. There were three associated adenocarcinomas in the cecum and one arising in a villous adenoma of the appendix. There were four associated mucinous tumors of the ovary, 2 benign and 2 malignant. The appendix was usually distended with mucin and showed a sessile papillary mucosal surface which microscopically was similar to a mucus secreting villous adenoma. Simple appendectomy or hemicolectomy resulted in no recurrences in 33 patients including cases with extra-appendiceal mucin.
3. **Cystadenocarcinoma or Adenocarcinoma —** There were 9 cases (8 females and 1 male) ranging from 40-82 years. These patients presented with right lower quadrant pain (8 cases) or hematuria and fecaluria (1 case). They all demonstrated filling defects of the cecum. There were no other associated lesions of the colon. Seven of these neoplasms had spread to the peritoneum and one had invaded the bladder but there were no distant metastases. The gross appearance of these lesions were similar to the cystadenomas. Microscopically they were also similar but demonstrated invasion of surrounding tissue often accompanied by pools of mucin. Only the invasive character indicated their malignant nature.

Wolffe et al[3] studied 42 benign lesions of the appendix in patients who ranged from 27-77 years of age. There was an equal sex incidence. The lesions were adenomatous polyps, cystadenomas and papillary adenomas similar to those described by Higa. Wolffe et al[2] also described 12 well differentiated adenocarcinomas of similar type to those described by Higa et al and similar to the lesion in the young woman presented today.

A mucocele of the appendix is usually characterized by marked distention caused by mucus accumulation. Although this condition can be due to obstruction, most commonly they are due to cystadenomas or adenocarcinomas. The histologic appearance of the lesion is more important than the

gross appearannce. Hence, the term mucocele should probably be disregarded in place of a more specific diagnosis such as cystadenoma (papillary or villous adenoma) or cystadenocarcinoma (adenocarcinoma).

The accumulation of mucinous material in the abdomen often called pseudomyxoma peritonei can be produced from a variety of causes including 1) adenocarcinomas of the appendix, 2) cystadenocarcinomas of the ovary, 3) a combination of the above, 4) mucin secreting carcinomas of another origin, usually the gastrointestinal tract. The last are often less well differentiated and are called colloid carcinomas. They have a worse prognosis. The course of pseudomyxoma peritonei is often determined by the differentiation of the basic neoplastic condition.

The most common tumor of the appendix is the carcinoid tumor. This lesion is almost always an incidental finding after appendectomy which is all that is required. Occasional tumors over 2.0 cms in diameter or those which invade the mesentery may necessitate hemicolectomy.[14]

In the last few years a lesion characterized by small glands composed of mucus secreting cells or small tubular glands infiltrating the wall of the appendix has been described. These are similar to carcinoids and are unlike the mucosal epithelial lesions described by Higa and Wolffe. These lesions reveal no changes in the appendiceal mucosa and have been called adenocarcinoids or goblet cell carcinoids. They may contain argentaffin or argyrophil cells similar to typical carcinoids but the presence of paneth cells and other histochemical findings suggest they may be derived from cells in the crypts since they rarely involve the mucosa but do infiltrate the wall. It is important also to recognize this lesion because it can metastasize to lymph nodes and is more aggressive than the usual carcinoid tumor of the appendix.

* DR. CHARLES BEAUCHAMP: Is the patient on chemotherapy and radiation?

DR. ROLFSMEYER: The patient has received both chemotherapy and radiation.

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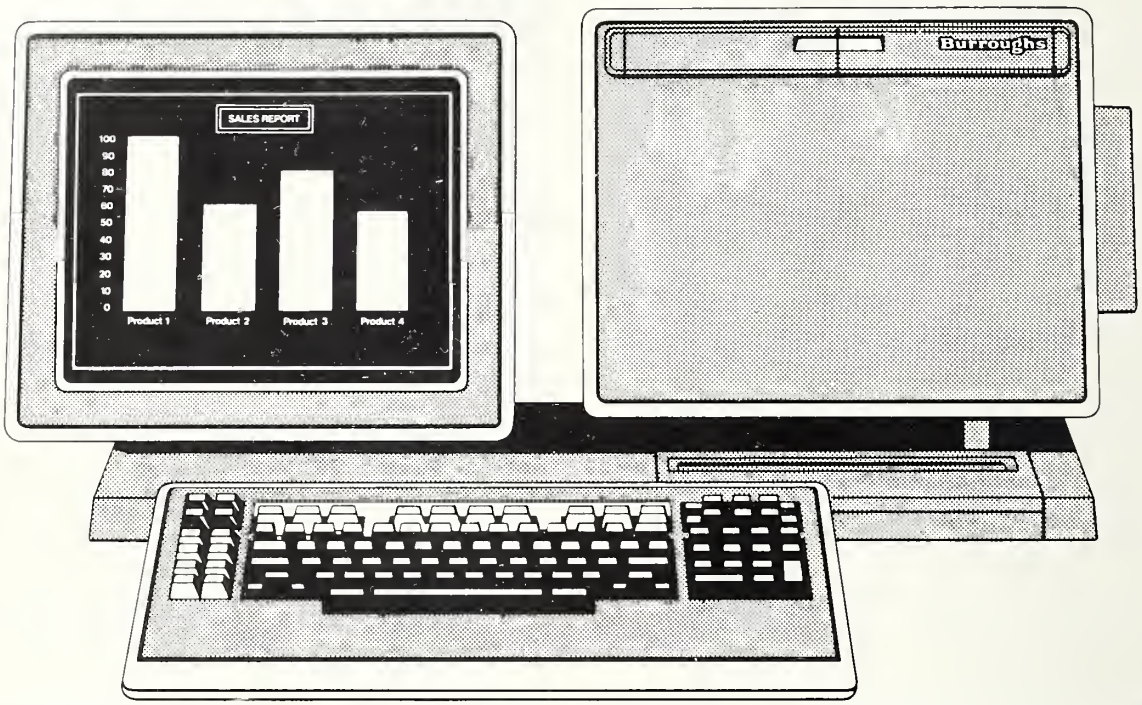
Do unto others as you would have them do unto you.

Wyeth **Jerry Maginn**

* Director, Outpatient Department, Royal C. Johnson Veterans Administration Hospital; Faculty, Department of Medicine, USD School of Medicine, Sioux Falls, SD.

THE FUTURE BELONGS TO THOSE WHO PLAN FOR IT.



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Myocardial Infarction in Young Adults — Etiology, Prognosis, and Follow-Up

Robert C. Talley, M.D.*

ABSTRACT

The etiology of myocardial infarction in young adults under the age of 40 may be atherosclerotic cardiovascular disease, infarction with normal coronary arteries, acquired vascular disease of the coronaries, congenital abnormalities of the coronary arteries, and blunt chest trauma. Despite these many possibilities the predominant cause of myocardial infarction in the young adult is the atherosclerotic coronary artery disease occurring in 78% of young women and 91% of young men. A significant number of young women have angiographically normal coronary arteries following acute myocardial infarction (17%), versus only 5% of young men. The predominant etiology of myocardial infarction in patients with normal coronary arteries appears to be thromboembolic.

Clinical factors have been found to separate patients with normal coronary arteries or insignificant disease from those with significant atherosclerotic vascular disease. These are the standard risk factors and angina pectoris preceding or following the infarction. Cigarette smoking is an especially important risk factor in young adults.

The hospital mortality of acute myocardial infarction in young adults appears to be less than that of non-age selected series. Follow-up studies reveal a yearly mortality of approximately 2.5%, and it is of interest that this mortality is not increased in the first year following myocardial infarction as noted in non-age selected patients. There is insufficient data in the literature whether prognosis can be predicted by post-infarction exercise testing, Holter monitoring, and nuclear ventricular ejection fractions as reported in non-age selected patients. It does appear, however, that coronary angiography is not warranted in all patients and follow-up studies should be individualized.

Mr. S. T., a 25 year old man, presented to Sacred Heart Hospital in Yankton, South Dakota, with a two day history of right chest pain aggravated by deep breathing and cough. Mr. T. had been hospitalized 30 days previously for a two day period with a right middle lobe infiltrate. His vital signs during that previous admission were a blood pressure of 130/70, pulse of 104, and temperature of 102.6°F. No etiological agent was cultured from his sputum, and he was treated with Ceclor and did well. However, two days prior to the current admission, he developed cough, scanty sputum, sore throat, and chest pain.

Other than the past history of the pneumonia, he had had no other significant illness, hospitalization, or accident. Social history revealed he was married, ran his own body shop, and was quite a hard worker. He was a non smoker of cigarettes, occasionally smoked pot. The family history was negative for heart disease except a maternal grandfather who died at age 55 with a "heart attack."

The review of systems was unremarkable except for weight loss from 165 to 146 pounds in the last 2-3 months. At the time of admission physical examination revealed a healthy appearing white man in no

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acute distress. The blood pressure was 136/80, the pulse 80, and the temperature 98.7°F. There was no jugular venous distention, the carotid upstroke was normal, the pharnyx was slightly injected without exudate. Examination of the chest revealed slight splinting of the right side, and auscultation revealed wheezes over the right posterior base and right axilla. Examination of the heart revealed a regular rhythm, no murmurs, and no abnormal sounds. Chest x-ray showed an infiltrate in the right middle lobe. The admitting diagnosis was recurrent pneumonia.

However, during that evening and early the next morning, chest pain became more and more severe and by the next morning was described as "ischemic" in character. At 11:30 a.m., on the second day of hospitalization an EKG was obtained (Figure 1) which had ST elevations in II, III, and avF. A repeat electrocardiogram two days later (Figure 2) revealed diagnostic changes of an acute inferior myocardial infarction. On the day the chest pain became severe

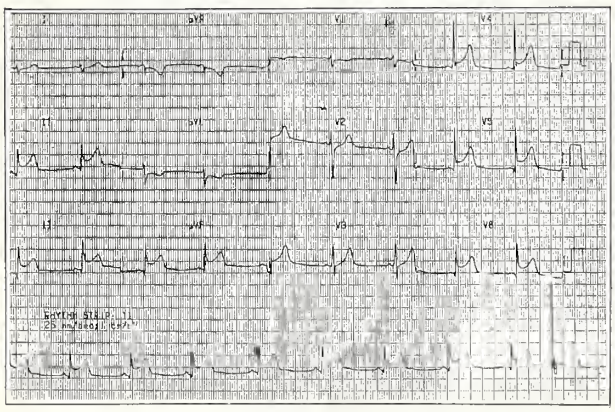

Figure 1
Electrocardiogram taken on the day of onset of severe "ischemic" chest pain.

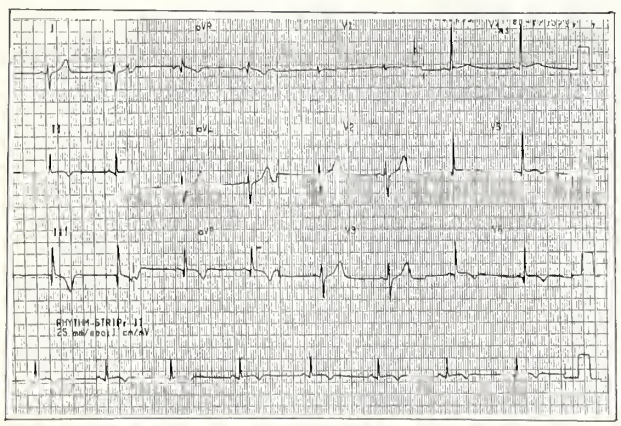

Figure 2
Electrocardiogram 48 hours after onset of severe "ischemic" chest pain.

the total CPK was 781, 12.5 per cent of which was CPK M-band, and 24 hours later the total CPK was 395 of which 10.4 percent was M-band. Other laboratory studies were within normal limits and included CBC, urine analysis, BUN, calcium, phosphorus, total protein, bilirubin, alkaline phosphatase, and on the first day, SGOT and LDH. The fasting blood sugar was 96, the serum cholesterol was 138 mg per dl.

After five days of an uncomplicated course, he was transferred to the Sioux Falls Veterans Administration Hospital for further studies. On admission to the Veterans Hospital, his height was 5′6″, weight 143 pounds, and his blood pressure was 110/80, with a regular pulse of 70. Physical examination was within normal limits. He was hospitalized at the Veterans Administration Hospital for nine days without complication. Before discharge the following studies were obtained: a nuclear left ventricular ejection fraction of 59%; a 24 hour Holter monitor which revealed no arrhythmias; and a Bruce protocol exercise tolerance test where Mr. T. exercised ten minutes without ST-T changes or symptoms. A 2-D echocardiogram was normal, and his serum cholesterol on day 13 after his infarction was 164 mg per dl with an HDL cholesterol of 43 mg per dl, the average male being 45. T_3 and T_4 were within normal limits.

These studies were done to indicate prognosis, but data that these studies do is not specifically directed at the young. What studies should be done in a young adult with a myocardial infarction? In order to decide we need to review the possible etiologies, risk factors and follow-up in young adults surviving acute myocardial infarctions. For the purposes of this paper a young adult is defined as 40 years old or younger.

Reported etiologies of acute myocardial infarction in the young are 1. atherosclerotic cardiovascular disease, 2. myocardial infarction with normal coronary arteries, 3. non-atherosclerotic acquired vascular diseases, 4. congenital abnormalities of the coronary arteries, and 5. chest trauma. Since we shall review at length atherosclerotic cardiovascular disease in the young adult, first consider other etiologies. What patients with myocardial infarction have normal appearing coronary arteries on angiography? What is the frequency of normal coronary arteries in young patients surviving acute myocardial infarction? Table I summarizes 13 series from the literature ranging from 5 to 619 patients, and reporting a 3 to 60% incidence of normal coronary arteries.[1-13] While it is hazardous to combine series as author's definitions vary, in these 13 papers there are 1,199 total patients of which 108 had normal coronary arteries or approximately nine percent

of patients under the age of 40 surviving acute myocardial infarction have normal coronary arteries on angiography.

TABLE I
MYOCARDIAL INFARCTION IN YOUNG ADULTS FREQUENCY OF NORMAL CORONARY ARTERIES

Author	ref	#pts with normal arteries	# pts		% with normal arteries
Khan	1	9	78		12
Welch	2	11	46	(women)	24
Bengtsson	3	1	24	(women)	4
Waters	4	3	29	(women)	10
Wei	5	4	13	(women)	24
Savran	6	3	38	(men)	8
Welch	7	6	109	(men)	5.5
VanHaeche	8	3	100	(men)	3
Kennelly	9	3	50	(men)	6
Gohlke	10	49	619		8
Nixon	11	3	5		60
Warren	12	9	68		13
Cullhed	13	4	20		20

Thirteen articles from the literature reporting young adults with myocardial infarction and the results of coronary angiography are presented. The number and percent of patients with normal coronary arteries from each series are listed.

Do these patients differ clinically from the patients with coronary artery disease? What are the possible mechanisms of an acute myocardial infarction in a patient with normal coronary arteries? Such patients tend to be at the younger end of the age spectrum, and it is rare for such patients to have many of the usual risk factors of atherosclerotic disease such as obesity, cigarette smoking, increased cholesterol, or family history. They may have other types of myocardial disease, and in some series the infarctions have been associated with other severe illnesses. In Welch's series from the Cleveland Clinic, 3 of 11 women with myocardial infarction and normal coronaries had primary myocardial disease, and 5 of the 6 men with infarction and normal coronary arteries had other explanations such as myocarditis, primary myocardial disease, or blunt trauma.[2, 7] Rosenblatt in Circulation stated these patients rarely have effort angina before or after myocardial infarction and their prognosis if they don't have other underlying diseases is excellent.[14] He felt that the infarction was due to a thromboembolic accident as did Glancy.[15] While this may be the case in the majority of young patients with infarction and normal coronary arteries, other authors such as Oliva and El-Maraghi have reported conclusive evidence for coronary artery spasm occurring in some of these patients.[16, 17] Elliott Chesler, from the VA in Minneapolis, reported four patients with mitral valve prolapse and acute MI with normal coronary arteries.[18] However, this has not appeared in other series as a possible cause of acute myocardial infarction. Therefore, acute myocardial infarction in young adults with normal coronary arteries is due to a number of causes. First, thromboembolic phenomena; second, coronary artery spasm, and least commonly, associated myocardial disease or other illnesses. If not due to other myocardial disease, the prognosis is reported to be excellent. Acquired coronary lesions causing myocardial infarction besides atherosclerotic disease have been reported in systemic lupus erythematosus, periarteritis nodosa, and other non-specific vascular diseases.[19, 20, 21] Of interest is the growing data that myocardial infarction in patients with lupus, as supported by Rosenthal with post-mortem and angiographic studies, may be due to an increase in atherosclerotic cardiovascular disease secondary to prolonged hypertension.[20]

Myocardial infarction is quite common in patients with polyarteritis nodosa. Clinically, these infarctions are usually silent and they are found by routine electrocardiographic monitoring or the development of congestive heart failure. Angiograms usually show multiple aneurysms of the coronaries as reported by Pick, and as Pick points out, as many as 56 of the 65 patients with periarteritis nodosa reported by Holsinger had cardiovascular disease.[21]

Anomalous origin of the coronaries such as the origin of the left anterior descending artery from the pulmonary artery, or the circumflex from the right coronary cusp, may be associated with acute myocardial infarction.[22] Finally, blunt chest trauma may lead to acute myocardial infarction even delayed from the time of trauma. Of 16 such patients reviewed by Vlay, 10 had lesions of the left anterior descending, two of the circumflex artery, and four of the right coronary artery.[23] Thirteen of the 16 patients were males, and as might be imagined, the most likely source of trauma was auto accidents occurring in eight of the 16 patients.

When discussing acute myocardial infarction in the young one needs to separate women from men. In young women, myocardial infarction is a **very** infrequent event. Dr. Underdahl reporting the Mayo Clinic experience found only seven myocardial infarctions in 95,000 hospitalized women under the age of 40. In the Framingham Study overt coronary artery disease was found in only 0.2 of 1,000 women under the age of 45, and none between the ages of 30-39.[24] Kannel reporting a 20 year followup of the Framingham Study found only one woman with ischemic heart disease who was premenopausal and under 45 years old.[25] Bengsston in the Goteberg Sweden Study found an annual incidence of myocar-

dial infarction in women under the age of 38 of .03 per 1,000 women.[3]

The etiology of the rare acute myocardial infarction in women under 40 is controversial. For example, Wei from Hopkins felt that non-atherosclerotic cardiovascular disease was more common than atherosclerotic causes.[5] Others disagree. Four series are shown in Table II of myocardial infarction in young women. Several explanations are necessary to clarify the table. In Morris's series the patients noted as ''non-atherosclerotic'' included two embolic infarctions, one with arteritis (SLE), and one with aortic dissection.[26] In Waters' study, a myocardial infarction was diagnosed only if there was an abnormal ventriculogram as well as EKG evidence of infarction.[4] Wei's two patients with a non-atherosclerotic disease included one patient with an anomalous origin of the left circumflex artery from the right coronary cusp, and one patient with systemic lupus.[5] Of his four patients with normal coronary arteries, two had anomalous left circumflex arteries arising from the right coronary cusp, but the arteries showed no occlusion at angiography.

TABLE II
MYOCARDIAL INFARCTION IN YOUNG WOMEN
ETIOLOGY STUDIES

Author	ref	#women	non-ASCVD	ASCVD	normal coronaries
Morris	26	24	4	19	1
Welch	2	46	—	35	11
Waters	4	29	—	26	3
Wei	5	13	2	7	

Results of four studies of the etiology of myocardial infarction in young women are shown. ASCVD = atherosclerotic cardiovascular disease.

Accepting these problems of combining the series, the four papers report 112 women of which six had non-atherosclerotic disease — 5%, 87 had atherosclerotic disease — 78%, and 19 had normal coronaries or 17%. Therefore, despite the high incidence of ''normal'' coronary arteries (17% versus 9% in combined series) and a 5% incidence of non-atherosclerotic coronary disease the usual etiology of myocardial infarction in young women is atherosclerotic cardiovascular disease. The atherosclerotic disease is age related; that is women closer to 40 years old are more likely to have atherosclerotic disease while an 18 year old woman with an infarction is likely to have other than atherosclerotic disease as a cause of infarction. These series noted the extent of coronary artery disease, even in women with infarction, is less in women than in men. Table III reports data from the Cleveland Clinic of consecutive patients with chest pain who underwent angiography.[2, 7] A significant lesion in these reports was a greater than 50% obstruction of the coronary artery. Note that in the 1,000 women with chest pain under the age of 50, 761 had no coronary disease versus 643 of 1,000 men under 40 with chest pain, and only 322 of 1,000 patients with chest pain unselected by age. Note also, that the extent of coronary disease is less in the women with coronary disease versus non-age selected patients. Four vessel disease in these studies was considered left main disease, and it is of interest that none of the young men and women had left main disease alone.

Can we tell which young women with acute myocardial infarction have normal coronary arteries versus significant coronary artery disease by clinical factors other than the angiogram? Since the disease is so rare there is little available data. We can conclude from Waters' data that as the number of risk factors increase the chance of significant coronary artery disease increases.[4] The risk factors are hyperlipidemia, cigarette smoking, hypertension, diabetes mellitus, and strong family history. In Waters' study, all of these were significantly greater in women with significant coronary disease. In his study women with chest pain who had greater than two risk factors had a 55% chance of significant coronary artery disease, whereas women with chest

TABLE III
CORONARY ARTEROGRAPHIC FINDINGS
CONSECUTIVE PATIENTS WITH CHEST PAIN STUDIED AT CLEVELAND CLINIC

	1000 women <50	1000 men <40	1000 unselected patients
No disease	761	643	322
1 vessel disease	101 (43%)	130 (36%)	198 (34%)
2 vessel disease	68 (29%)	111 (31%)	216 (37%)
3 vessel disease	62 (26%)	110 (31%)	156 (27%)
4 vessel disease	5 (2%)	6 (2%)	18 (3%)

Three series from the Cleveland Clinic reporting the coronary angiographic findings in consecutive patients with chest pain are listed. The number of patients in each study with no coronary artery disease is noted. Note that the percents reported for vessels involved are the percent of vascular disease in patients with coronary artery disease, and exclude the patients without coronary artery disease.

pain and less than two risk factors had only a seven percent chance of having significant coronary artery disease.

The exercise tolerance test was not helpful for selecting who did or did not have significant coronary disease. Slone, reporting in the New England Journal of Medicine, found a significant relationship between cigarette smoking and atherosclerotic disease in women.[27] MacKay found in women under 45 with severe hypertension (diastolic pressure greater than 120) a significant incidence of coronary artery disease; that is, 22 of 50 patients had disease.[28] Data seems to show an increased risk of coronary artery disease in women on oral contraceptives, yet the same investigators found no relationship between non-contraceptive estrogen treatment and coronary artery disease if one takes into consideration the usual risk factors.[29] There is little or no data on the follow-up and prognosis in young women with a myocardial infarction.

Our patient however, is a young man. As seen from the data presented, myocardial infarction is more common in the young man than in the young woman. It is much less likely to be due to unusual causes or for men to have normal coronary arteries; therefore, in men there is likely to be extensive atherosclerotic cardiovascular disease. Table IV examines five reported series of coronary angiograms in men under the age of 40 surviving acute myocardial infarction. In Welch's series the six men with

TABLE IV
CORONARY ARTEROGRAPHIC FINDINGS MEN LESS THAN 40 YEARS OLD WITH MYOCARDIAL INFARCTIONS

Author	ref	# pts	non-ASCVD	normal ASCVD	coronaries
Savran	1	38	35	—	3
Welch	7	109	103	—	6
VanHaeche	8	100	97	—	3
Kennelly	30	145	129	14	2
Warren	12	65	54	3	8

This table reviews the coronary angiographic findings in young men with myocardial infarction. ASCVD = atherosclerotic cardiovascular disease.

normal coronary arteries, had a missed diagnosis — 1, primary myocardial disease — 1, blunt trauma — 1, and myocarditis — 1. Two remained unexplained.[7] In Kennelly's series of the 14 patients with non-atherosclerotic coronary artery disease, five patients had endocarditis, two had other embolic diseases, two had blunt trauma, and one each had a dissecting aneursym, systemic lupus, Berger's disease, coronary artery laceration, and an unidentified diffuse arterial disease.[30] In the three patients in Warren's series with non-atherosclerotic coronary disease, all had congenital lesions of the coronary arteries.[12] Realizing again, that it is hazardous to combine series, these papers report 457 patients of which 419 or 91% had coronary artery disease. This versus 78% in a similar group of women. In the men four percent had non-atherosclerotic disease versus five percent in women, and five percent have normal coronary arteries versus 17% in women. Therefore, in the young man a myocardial infarction is very likely due to the atherosclerotic cardiovascular disease.

Can one predict on clinical grounds which patient will have significant coronary artery disease and which will have single vessel or no coronary artery disease? As in women, risk factors have been studied and the more risk factors the more coronary artery disease. These are the common risk factors, hyperlipidemia, smoking, family history, obesity, high blood pressure, and diabetes mellitus. Cigarette smoking in particular is quite a risk. Kaufman's data reports that smoking one pack of cigarettes a day increases the risk of infarction 4.6 times over a non-smoker, and 2 packs or greater increase the risk 7½ times versus the non-smoker.[31] There is data in young men with myocardial infarction that the total cholesterol may remain normal, but the HDL cholesterol is a significant risk factor and diminished from normal. Kaukola and Hatch both found such a relationship that is, that the HDL cholesterol was significantly decreased from controls while cholesterol was equal to controls.[32, 33] There are also reports that short stature is a risk in the young.[34]

Looking at risk factors, what about our patient? Our patient has only short stature at 5′6″ tall as a possible risk factor. There is no significant family history of heart disease, he is not diabetic, he does not have hypertension, he has never been a smoker, and his total cholesterol and HDL cholesterol are normal. Savran and Vanhaeche found that a positive exercise tolerance test following a myocardial infarction occurred only in those young men with two or three vessel disease.[6, 8] However, Davia found the exercise test to be no help in predicting which patients had significant coronary artery disease versus nonsignificant or normal coronaries.[35] Historical factors do appear to be of some help in distinguishing between young men with a myocardial infarction and significant coronary artery disease versus no coronary artery disease. Rosenblatt compared 25 men under 40 with myocardial infarction and normal coronaries to age related controls with myocardial infarction and coronary artery disease.[14] The mean age in those with normal coronaries was less than those with coronary artery disease. There were no prodromal symptoms before the myocardial infarction in patients with normal coronaries versus

symptoms in 70% of those with coronary artery disease. He found no effort angina preceding the infarction in patients with normal coronary arteries versus effort angina preceding infarction in 63% of the patients with coronary artery disease. Warren also found differences in preceding and follow-up angina in patients with non-significant versus significant coronary artery disease, but the differences were much less striking than in Rosenblatt's series.[14] In Warren's series 25% of the patients with normal coronaries had angina prior to the infarction versus 30% of patients with coronary disease, and 12% had angina after the infarction even though they had normal coronary arteries versus follow-up angina in 77% of those patients with significant coronary artery disease.

Again, checking our patient, he had no angina preceding his myocardial infarction, he has had no angina since his myocardial infarction both in follow-up and by exercise testing, and he had no prodromal symptoms preceding his myocardial infarction.

What is the hospital mortality of myocardial infarction in young men, and what is the follow-up? As in young women there is very little data but at least in young men there are some follow-up studies. Simonson reviewed experience in the USSR and found a hospital mortality of 14% in young men under 40 with acute myocardial infarction versus a hospital mortality of 31% in men with acute myocardial infarction over the age of 60.[36] Kennelly from South Africa noted a hospital mortality in young men with acute myocardial infarction of 16%, and stated that this was less than in older men, but no data was given for the older men.[9, 30] Cullhed in Sweden noted an acute mortality of myocardial infarction in the young man of 29%; however this was a public health data and included those patients who had sudden death and never reached the hospital.[13] Finally, there are two studies from the United States. Roth reported data from New Haven, Connecticut, of 53 patients under the age of 40. He found a 2% hospital mortality with acute myocardial infarction.[37] Kaplan reported 44 patients under the age of 40 with a 4.5% hospital mortality.[38] Therefore, it appears the hospital mortality is quite low, at least in the USA, and it is lower than the hospital mortality of older patients.

The long-term follow-up in men is also of interest. From Cullhed's series in Sweden there were 10 patients followed 10 years. Over that entire period of time, there were two deaths or a two percent per year mortality. Of the eight long-term survivors seven were examined and all seven were asymptomatic and had a negative exercise tolerance test. Six of the seven were working fulltime, one patient had a psychiatric disability. None of these patients smoked and only three had abnormal lipids. Shapiro in England followed 141 males under the age of 45 for ten years after their myocardial infarction.[39] In that period of time there were 35 deaths or a 25% total mortality (this versus five percent in an age matched general population), and a yearly mortality of 2.5%. It is of interest that a higher mortality was not noted in the first year following infarction as noted in many series of non-age selected men with myocardial infarctions; that is, the first year mortality was quite low in this study, and the yearly mortality was level throughout the ten years after the acute myocardial infarction. The mortality in Shapiro's study was definitely correlated with continuing cigarette smoking, showing a striking mortality in the smoking patient following myocardial infarction. The mortality was also correlated with high initial low density lipoproteins and as in most other series of coronary artery disease correlated with left ventricular failure. Ten of the 13 patients with left ventricular failure during their acute myocardial infarction died during the follow-up period. Roth followed 51 survivors of acute infarction for up to 16 years. There were 11 deaths, a 22% mortality over the total follow-up period, or a mortality of 2.2% per year. There were 18 patients with recurrent myocardial infarctions. At the end of follow-up 49 of the 51 patients were working, one patient was on disability due to his heart disease, and one was on disability due to blindness secondary to diabetes mellitus. Again, looking at the time of death over the follow-up period, the patients did not die early after the myocardial infarction, but deaths were spread throughout the years of follow-up. Kaplan followed 42 hospital survivors and noted seven deaths in ten years for a total mortality of 16.7%.[38] Since the average follow-up was approximately 4.4 years there was a 3.8% mortality per year. From these studies it appears the mortality, acute and long-term, is less in the young patient with a myocardial infarction versus an older patient with a myocardial infarction. Those patients with normal coronaries and no underlying myocardial disease seem to have an excellent prognosis as if the myocardial infarction was an accidental event not to be repeated.

In terms of medical versus surgical therapy, only one series was found and this was McMartin's series of 24 patients, 22 males and 2 women between the ages of 23 and 35 years old.[40] Patients were catheterized an average of 6.6 months following the acute myocardial infarction. Thirteen had angina pectoris at the time of catheterization, and of the entire group of patients 46% had single vessel disease, 21% two vessel disease, and 33% three vessel disease. Nine of the 24 patients were operated, five for severe

angina pectoris and four because they had three vessel disease. The average follow-up was 33 months and there was no difference between the medical or surgical group in angina pectoris, in the number working (80% in both groups), or in mortality. In fact, the only death in either group was a suicide, and therefore, as in the other series mortality was approximately 2% per year. The authors however, felt that they had prolonged the life of those operated patients with three vessel disease.

Given this data, what recommendations should be made to our patient? Davia, VanHaeche, and McMartin felt that angiography was indicated in all young patients following myocardial infarction to "define the status of the coronary circulation" and for "prognostic reasons."[35, 8, 40] All these series were cath lab series and only McMartin had any follow-up of the patients. Cullhed who did have follow-up of his patients did not recommend routine coronary angiography.[13] After review of these articles, I conclude the following about our patient. First, he has no risk factors (except possibly for height), he had no prodromal symptoms, and no previous or follow-up angina pectoris, has a negative exercise tolerance test, and a young age (less than 30), all of which suggest no or minimal coronary artery disease given the articles reviewed. Therefore, I conclude that his prognosis is probably very good. If he were older than 40, given the negative exercise test, the left ventricular ejection fraction of greater than 40% and the negative Holter monitor, I would recommend no further studies as there is a large amount of data indicating such patients are at minimal risk. It is unknown if this data also pertains to young adults; however, no papers reviewed in this article would suggest otherwise. If he had had a positive exercise tolerance test; that is, ischemia at a distance, I would suggest angiography and bypass surgery just as I would in the older patient. If the Holter monitor had shown complex PVC's, anti-arrhymthic treatment would have been recommended, and if the ejection fraction were less than 40% I would have known he had a poor prognosis, and perhaps taken steps to improve it, but what steps to take are not clear. As in any patient it is vital that the young patient stop smoking, have control of hypertension, and control of the serum lipids. Perhaps the problem of smoking is even more important in the young adult given Shapiro's data.[39]

On the other hand, there is a high probability that our patient has normal coronary arteries. If he were a pilot, if he were buying large amounts of insurance, one could easily make the case to prove this status by angiography, and therefore, it is felt that the recommendation for angiography should be individualized. Of interest is that in both men and women no left main disease alone was found; therefore, except for prognosis establishment in special cases and in situations already outlined a recommendation for a routine angiography after acute myocardial infarction in young adults cannot be made.

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Through the monthly message listed as President's Page, I have had the opportunity to express some of my thoughts and concerns about various aspects of the practice of medicine in South Dakota. Basically these thoughts have been tempered, to date, by actions of our State Association and the American Medical Association. Recently I have heard "rumblings" of attitudes for and against our South Dakota Medical School. At this point I'd like to deviate and make the following observations, strictly my personal thoughts.

The question of whether we need a Medical School is entirely didactic in my opinion. Since the advent of the four year school in 1973, the impetus and spin off from the school has had a marked positive effect on the entire state. Can we afford the school? I don't think we can afford not to have our school. With 45% of our graduates from 1977 returning to South Dakota, the need for replacement physicians will continue. If we do not provide a school we will be denying our South Dakota young men and women an opportunity for a medical education. For years the possibility of various compacts with other states have been explored and have so far come up wanting.

Are we providing a good medical education for our students? All you have to do is check the records of those who have graduated since '77, their postgraduate training and their present practice. We should be proud of all of them. How about the residency programs? To date all programs have turned out a "finished product" able to take his or her place where ever they wished to practice. The proof of the pudding is the end product and we have that.

We, as practicing physicians, can help improve the continuation of the school by taking a positive and easily defendable stand with the Board of Regents and the Legislature. There are many good aspects of our school and we should not let some "pet peeve" turn us off. We can also continue with real help directly to the students through the Endowment Fund and also by supporting the Alumni Foundation.

I'm proud to say, I'm a South Dakota Medical School graduate and I also have a son who finished with the "Charter" class of '77. If you think this influences my outlook, I can say "Yes, your darn right it does!" Please help us continue to educate our South Dakota men and women to become excellent physicians for South Dakota.

Howard L. Saylor Jr.

Howard L. Saylor, Jr., M.D., President
South Dakota State Medical Association

FAMILY PRACTICE
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Solutions and Answers in Search of a Problem*

H. Thomas Wiegert, MD, President
Society of Teachers of Family Practice

The kaleidoscopic emotional and intellectual issues which underlie the current concern about health care costs make rational thinking difficult. Even more tenuous is the task of fully articulating and understanding the questions for which so many answers and solutions are being offered. Health care providers of all descriptions are reacting by offering solutions which look to fertilize and enhance their own economic trees without considering the ecology of the whole social forest.

As a society we have placed high value on health; equally we have valued individual freedom and ascribed to egalitarian access for a wide variety of services. In our zeal to realize fruition of a goal for access to health care (in the somewhat dubious belief that we would become more healthy) we have only belatedly understood the economic sacrifices that must be made to realize that goal. Now, it seems, we are in a scapegoat phase — not wanting to come to grips with the elusiveness of that goal but rather hunting for a place to lay the blame. In this hunt, physicians are a reasonable, logical target. After all, they are the "ordering agents" for health care resources.

The health care remuneration system for two decades has provided an incentive for unbundling services and creating ala carte codification charging systems. The frantic search in 1983 for ways to reduce health care expenditures culminated in the application of prospective payment for Medicare hospitalization under the DRG codification system.

The implementation of this system was more an act of faith than a reasoned process. We are now actively caught up in the midst of extending this capping of health care costs by developing a remuneration scheme for physicians which will reduce in aggregate, professional charges. The political process demands there be no reduction in services, "quality of care," access, or interference with individual freedom to obtain health care services from any chosen provider irrespective of how illogical the choice in terms of resource utilization. How can we expect such a system to be a solution to the perceived problem?

We as individual members of society must come to grips with the limitation of what health care providers can contribute to health. We can expect our health care providers to be our counsellors and advisors on how to best preserve our homeostasis given our genetic makeup. We can expect this group to monitor our daily environment and bring pressure to bear in keeping that environment at the maximum healthful level consistent with the state of the art and political realities. We can expect our health care providers to "care" for us always, cure us sometimes, and be prudent in resource use to keep us at the maximal functioning level consistent with our willingness to dedicate our behavior and our personal resources to that end.

Unless we as members of society are willing to accept limitations on some aspects of our perceived freedoms to demand and waste resources based on individual whim, no amount of coercive effort to control our health care provider milieu will address the issue of health care cost containment. Were we to have health care providers give all of the professional care and service free, the maximum reduction in health care costs would only be in the range of 30%.

I, for one, welcome the challenge given to physicians to accommodate to prospective payment for health care. Despite the hue and cry of impingement on physician standards of living, I believe we will be able to effectively function within some value framework that is less than the current dollars expended per person.

We can exercise restraint in the use of resources for health care and demand data to support the specific processes of medical care relative to the health outcomes. I commend all of you to the challenge presented by attempts to cap health care provider costs. I believe it will be a salutatory experience. A bigger challenge, however, lies in developing an ability to motivate and change behavior of a patient clientele to rely less on the medicalization of the problems of daily living.

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Family Medicine Leaders Urge Enlarged Residency Programs

The need to strengthen and expand family medicine education as a bulwark against deterioration of our system of health care was a major theme of the AAFP Congress of Delegates meeting in Kansas City recently.

Certainly there was unanimity of agreement on the issue by three of the reigning presidents within the family of family medicine who addressed the session, Robert W. Higgins, M.D., newly installed AAFP president; ABFP President Oscar M. McCallum, M.D. and STFM president H. Thomas Wiegert, M.D.

Each explained the specter of current family practice education as a result of the upheavals in traditional systems of financing.

Dr. Wiegert told the delegates that after 15 years of accomplishment, family medicine residency programs have plateaued. They have not grown in recent years to accept more trainees. At the same time, he continued, family medicine residency training has come under closer scrutiny from both within and without the discipline.

"There is a perception by some family physicians that the residency programs are offering undue competition to the private sector. There is a perception by some hospitals and some medical schools that the structure and costs of residency programs are too high relative to other programs. Thus, more programs are being treated as cost revenue centers with explicit exhortation to become self-sufficient."

"If we are to provide the public with the number of family physicians needed for replenishment and growth, all of us — those in academic health centers, those in community hospitals, and those in practice who are the backbone of American medicine — must share our resources, our patients and ourselves to accomplish this goal. We must look to innovative ways to provide quality, relevent education for our residents and we must search for ways to fund medical education that do not place ever-increasing economic demands on residencies." Dr. Wiegert termed the remainder of the decade a "pivotal" period for family practice residencies during which academia will need strong input from AAFP members.

"We are fragile at this point in history" he warned, and an example of that fragility was brought to the attention of the delegates by Dr. McCallum of the ABFP.

In his address to the Congress, Dr. Higgins proposed a four-point program aimed at increasing the number of family physicians to meet the prevalent needs of the underserved who still exist in our health care system.

Based on recent survey data compiled by the AAFP, Dr. Higgins said a ratio of one family physician per 2,750 people is needed, compared to the present ratio of one family physician for 3,705 people in the U.S.

To arrive at such a status he proposed:

1. Increasing the number of family practice residency positions by enlarging existing programs and/or creating new ones.
2. Developing more of a specialty presence in medical schools in order to stimulate student and faculty interest in family medicine.
3. Attracting minority medical students into the specialty with the view of better serving minority populations.
4. Recruiting more practicing family physicians for teaching positions in residencies.

The American Health Care Industry: Where We've Been, Where We're Going

Lyle E. Schroeder*
Anne Rodrick†

ABSTRACT

What is the future of the health care industry? Today it looks much different than the industry of 20 years ago — even of 5 years ago. Because it has changed so dramatically, so quickly, it is hard to predict with accuracy where we will be in another decade. By examining some of the issues that have shaped health care in the past, we can get a flavor of what health care may be like in the future.

THE PAST

Until 1980-1981, the American health care industry was one of the most buoyant and upbeat industries in the world. Following World War II, America began to pour dollars and resources into health care in a way that had never been done before. The Hill-Burton funding program allowed us to build 2,500 acute care facilities in the decades of the 40's, 50's, and 60's. That translates into almost 50 percent of the hospitals standing today. To guarantee that all Americans could use these facilities, Congress developed the Medicare and Medicaid programs that today provide care to the aged and to the underprivileged. The health insurance industry flourished at the same time, providing society with the means of enjoying the benefits of high quality health care without incurring prohibitive financial burdens. Because employer health insurance premiums were tax deductible, employers continued to offer more and better coverage to their employees, until first-dollar coverage became the rule, not the exception, throughout the country. Today over 90 percent of the hospital care delivered in the United States is covered by a third party, whether Medicare, Medicaid, or private insurance companies; only 10% is paid for out of the patient's own pocket.

At the same time that more and more Americans were gaining access to health care through extensive insurance coverage, the federal government was working to guarantee that health care would be delivered equitably across the country. Programs addressing the manpower issues poured monies into education, and we had more physician education programs than ever before. Incentives to get people into medical school and to get graduates into underserved areas took the form of grants, loans, and programs that absolved physicians in those areas of their financial obligations.

The monies also poured into the quality issues of health care. Care for the poor, organ transplants, renal dialysis units, neonatal nurseries, CT scanners — all this took money, lots of money, and we poured funds into these programs. The more money a health care provider spent, the more money it got back from the government. The result: a growth rate that was approximately twice that of the consumer price index.

THE PRESENT

What is our health status today? Americans are living longer than ever before: in 1900, the average American lived 47 years; today that figure is up to 74.5 years. Our infant mortality rate has never been lower; our maternal death rate has never been lower; and we have succeeded in guaranteeing our population access to quality health care.

That's on the positive side. On the negative side,

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health care costs have never been higher. For the last four years, since about 1981, the problems of health care costs have been a major economic, political, and social issue. In 1981 Blue Cross lost $300 million, Prudential lost $360 million, and all commercial insurers together lost $1.2 billion in health care costs. The federal government was looking at a huge deficit — $200 billion — that included sky-high health care costs. It was predicted that health care costs, if they continued to grow at the same rate, would consume 100% of the country's payroll by the year 2020. At the same time, employers in corporate America were going through hard times and were losing money; labor was losing jobs. On the state level, California introduced Proposition 13 and a number of other states followed with similar proposals to hold down costs and taxes across the board. The costs of health care received a great deal of negative media attention in the early 1980's, and the public unanimously declared that it was fed up and something needed to be done.

There are approximately 35,000 Americans over 100 years old today; according to some predictions, that number will increase to 100,000 by the year 2010.

Today we find ourselves at a watershed in the health care industry. On the one hand, we enjoy a higher level of health care and greater freedom from illness than ever before. As Americans, we have come to expect high-quality health care as a right, not a privilege. On the other hand, we all agree that the costs of that care are astronomical and must not be allowed to continue to grow. To complicate matters, as a result of our advances in technology and medical treatment, we are all living longer. The fastest-growing age group in this country is the 85-and-older group. There are approximately 35,000 Americans over 100 years old today; according to some predictions, that number will increase to 100,000 by the year 2010. The elderly are traditionally the most frequent users of health care. The demand for services will increase, not decrease, as our population ages.

The present sees us — hospitals and physicians alike — facing increasing regulation and a restricted flow of payment. Congress, by enacting the Prospective Payment System, has led the way in reducing the amounts paid to providers. The burden of risk has been shifted from the payer to the provider. Many private insurers have already followed suit; all others will join this movement as they determine its overall benefit.

It has only been in the last five years or so that we've begun to realize that the health care industry is a business, and that it should be run as a business.

THE FUTURE

What lies ahead for the health care industry? What can we do to ensure that health care is delivered as responsibly and economically as possible without jeopardizing the public's right to that care? There are several issues that will shape the way we answer that question.

Competition. Until recently, hospitals were viewed as benevolent institutions, providing care out of a sense of compassion. They were not supposed to make money; they were supposed to take care of people no matter what the cost. It has only been in the last five years or so that we've begun to realize that the health care industry is a business, and that it should be run as a business. Competition is no longer a dirty word for hospitals. However, competition is not limited only to those of us in the hospital industry. Today we're competing with other hospitals, but we're also competing with physicians, with non-physicians, and with ambulatory care facilities like urgi-centers and after-hours clinics. Physicians are competing with each other and with chiropractors, psychologists, podiatrists, and other non-physicians. Non-physicians are competing with each other. Major corporations have entered many aspects of health care, providing another set of competitors. In an era of ever-tightening budgets, competition for patients — for business — is going to become more important than ever. It's something that the health care industry is not accustomed to, but it's unavoidable.

Winners and Losers. Hand in hand with the idea of competition goes the idea of winning and losing. Every business knows that if it doesn't compete effectively, it will lose. The same thing will happen in the health care industry. Hospitals will close. Many will go into default, and will be sold. As patient days shrink, we'll be faced with the problems of excess beds. Some estimate that up to 2,500 hospitals will lose the game in the coming years and will be closed. We have seen what the issues of excess capacity, deregulation, and competition have done in other industries. Braniff lost the game. Chrysler and Continental Illinois Bank have both suffered grave losses. We absolutely cannot afford to ignore these examples. How can we win? We must adjust to our role as a business and respond to the demands of a price-oriented society. This means

marketing our products in ways that make them more attractive. This means attracting consumers and, just as important, attracting physicians.

The glut of physicians has already resulted in increased competition among physicians and a militant stand by physicians against non-physicians.

Glut of Physicians. One of the results of the dollars poured into medical education in the 60's and 70's is an abundance of physicians. By 1990, the number of practicing physicians in the United States will have increased by 43% since 1978; during the same period, the total population will have increased by only 9%. In 1959, we had 141 physicians per 100,000 people; in 1978, we had 172 per 100,000; by 1990, we will have 220 per 100,000. We have 127 active schools of medicine in the United States, graduating 18,000 physicians each year. And the glut of physicians is coming not only from American medical schools; in this country today one physician in six is born outside the U.S. and receives training outside the U.S. Many others, American-born, receive medical training outside our borders.

What will this mean for physicians? To take this situation to the very worst degree, we may end up with a scenario like that now enacted in Spain, where between 5,000 and 6,000 physicians are unemployed and on welfare. More realistically, we may end up with the sort of economic dislocation that characterizes Chicago today, where in one year 60 new cardiologists have recently located in the downtown area. Some of those already established and who thought their practices were stable have had to make major adjustments in their standards of living. None of this was foreseeable, or even thinkable, just a few months ago. The glut of physicians has already resulted in increased competition among physicians and a militant stand by physicians against non-physicians.

Nobody is predicting a growth in the health care industry.

A Shrinking System. Even as the number of physicians will continue to grow, the health care system will shrink over the coming years. Various studies indicate that one out of every eight admissions is unnecessary, that one out of every three hospital days is unnecessary, and that half of all the hospital utilization in this country is unnecessary. Some illustrate the unnecessary use of today's health care system by using the firebell approach, saying that if you rang a firebell in the average hospital, most of the patients would beat the physicians out the door.

Other studies show that good patient care can be delivered in fewer days. Under Medicare, patients over 65 use 4182 days of care per 1,000 population. Under the Kaiser Permanente system, patients over 65 use only 1640 days per 1,000. We have traditionally felt that we needed 4 to 4.5 beds per 1,000 population to deliver good health care; today studies show that we only need 1.7 to 2 beds per 1,000 population to adequately serve our communities. That's a 50% reduction in hospital beds.

Where is this leading? Researchers differ on exact figures, but they all agree the system is shrinking. Eli Ginsburg predicts that between 40 percent and 50 percent of the hospitals in existence today will close in the coming years. Martin Feldstein puts that figure at 1,000 of existing hospitals, while Walter McNerney estimates that about 1/3 will close. **Nobody** is predicting a growth in the health care industry.

We may soon face the reality that equal access to health care may not always mean equal levels of health care.

Fewer Dollars, Less Capital. No one disputes the fact that there will be fewer dollars to spend on health care in the future. Health care facilities must begin looking to other sources for finances. If we live only off of patient dollars, our diet will be a lean one indeed: fewer patient care dollars will convert into net losses. Losses will result in reduced employment, lack of job security, erosion of equity, lack of technological growth, lack of research opportunities, and no capital for physical improvements.

We must accept the fact that to make a profit is not to commit an evil deed. Jack Crocker, former chairman of SuperValu Stores Inc., and current chairman of the firm's executive committee, put it succinctly: "Your company's profits do not mean greed and selfishness; losses do not mean kindness and generosity." If we want to serve our patients, we must ensure that we are healthy enough ourselves to deliver quality health care.

Not only are we facing the problem of fewer patient dollars, we are beginning to see a tightening of capital. As we mentioned before, almost 50 percent of our existing hospitals were built in the 40's, 50's, and 60's with Hill-Burton dollars. Now, decades later, many of them need extensive physical renovation. We are competing for capital with state

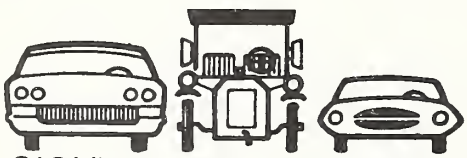
and federal governments who are faced with the crumbling infrastructure in our country. Interstates, waterways, airports, roads, bridges, and more — all are suffering the pangs of old age, just like many of our hospitals. We cannot ignore the difficulties we face in raising capital to renovate; we also cannot ignore the fact that we cannot depend merely on patient dollars for this capital.

A Two-Tiered Health System. What will happen to the health care system in light of the new concerns over costs? One possibility is the development of a two-tiered health care system, made up of basic and higher levels of health care. The higher levels of care would be available only to those who could afford to pay for it. This type of system will be acceptable only if the lowest level of treatment is high enough to provide satisfactory care. We may soon face the reality that equal access to health care may not always mean equal levels of health care.

Conclusion

It would be inappropriate and foolish to suggest that the solutions to these problems will be easy to find. But we do know that when we find solutions, they are going to be hard to swallow for Congress, for state legislators, for physicians, for hospitals, and for the American people. We have grown accustomed to the finest health care system on earth. We may have outstripped our ability to pay for its continuation and we're going to have to face this dilemma head on.

The months and years ahead will see us deal with very sticky issues relative to access, biomedical ethics, payment and more. While this necessitates change on the part of those of us who remember the growth years, it is essential that we join vigorously into these discussions, which will shape the future of American medicine and health care. We have much to offer as these policies are made.



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Appendiceal Intussusception

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ABSTRACT

The clinical and surgical findings of a patient with a pedunculated cecal mass are presented. The patient has a history of appendectomy in 1938 and a brother who had a colon carcinoma. Upon surgical isolation and reduction of the mass, it was found to be an unusually rare variant of benign cecal masses — an appendiceal intussusception.

INTRODUCTION

Masses found in the cecum in adults over the age of 50 have a high frequency of malignancy. Such masses when discovered by non-invasive techniques should raise in the examiner a high index of suspicion. Plan for treatment often includes endoscopic evaluation, biopsy, or removal, or radical surgery, including right hemi-colectomy with node dissection.[1] Infrequently, these masses are found to be benign, such as lipoma of the ileal cecal valve, hemangioma, hamartoma, or intussusception of the appendix. In 1963, Collins reported that 0.01% of 71,000 human appendix specimens were naturally inverted.[2]

Intussusception of the appendix is more common in children, however occurrence in adults has been reported.[3] The etiology of appendiceal intussusception is multivariant and is likely a function of several specific anatomic and pathological circumstances such as: endometriosis, intestinal helminths, acute inflammation of the appendix, cecal carcinoma and others.[4] This case is particularly unique because a history of prior appendectomy was reported by the patient. This case is presented as a unique variant of benign cecal masses.

CASE REPORT

A 60-year-old white male was seen in the clinical setting for a routine physical examination. The patient's only complaints were a recent 10-12 pound weight loss and bowel movement irregularity. The patient was at that time taking Inderal 10 mg twice daily for control of a benign cardiac arrythmia.

The patient gave a history of previous abdominal surgery in 1938 which involved "removal" of a ruptured appendix and drainage of a peritoneal abscess with a surgical wound which healed by secondary intention. Pertinent family history revealed a brother who had a carcinoma of the colon diagnosed several years prior to this patient's clinical presentation.

Physical examination revealed a well healed right lower quadrant scar from the previous appendectomy and drainage of the intraabdominal abscess. There were no other remarkable findings such as presence of palpable abdominal mass and hepatomegaly.

A barium enema was performed which revealed the possible presence of a filling defect in the cecal pole. The remainder of the colon revealed no other gross abnormality. A double contrast barium enema was then performed which confirmed this finding

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Figure 1

Figure 2
View 1 and view 2 showing a smooth pedunculated filling defect in the base of the cecal bulb.

(Fig. 1 & 2). The patient was subsequently admitted for further evaluation including possible excisional biopsy of the cecal mass. Laboratory results were all within normal limits including liver enzymes and CEA levels. Liver spleen scan revealed mild hepatomegaly. Chest x-ray and EKG were within normal limits.

The patient was prepared for surgical excision with appropriate mechanical and antibiotic bowel preparation and was taken to surgery prepared for excision of the mass up to and including radical right hemicolectomy should that be required. In surgery, the cecum was carefully palpated, and a hard pedunculated mass was identified in the cecum. Further exploration revealed that the appendix had in fact intussuscepted completely into the cecum presenting as the cecal mass. The intussusception was reduced via manipulation of the cecum and was subsequently removed.

Pathological studies of the excised appendix revealed an adenomatous polyp at its tip without evidence of malignant changes. The remainder of the appendix revealed chronic inflammatory changes.

DISCUSSION

There are several tools available to the clinician to evaluate filling defects of the cecum and differentiate appendiceal intussusception from malignant and other benign conditions. Barium enema in the case of appendiceal intussusception, will usually show a smooth, pedunculated filling defect in the cecal bulb. This can be confirmed by air-contrast studies. Styles and Larsen reported the CT appearance of appendiceal intussusception as a "well-demarcated cylindrical mass of soft tissue density with a center of mixed increased and decreased attenuation," however, they do not advocate the routine use of CT scans as a primary diagnostic tool.[5] Fazio et al used endoscopic techniques to visualize and remove a cecal mass which ultimately proved to be an intussuscepted appendix, however, this technique can lead to problems as well be discussed later.[4] It is important to keep in mind that each of these options are available and have advantages and disadvantages which are unique unto themselves.

Various techniques can be employed to reduce such an intussusception if diagnosed accurately preoperatively. Kleinman reported successful treatment with hydrostatic reduction. This procedure involved an air-contrast study via a rectal tube which progressively distended the cecum resulting in a gradual filling of the appendix. At completion of the study, the appendix was completely filled and reduced.[6] Nikapota reported similar results by the administration of greater amounts of barium during his radiologic study.[1] Fazio et al reported poor results from endoscopic removal of an intussuscepted appendix and warned that all endoscopists must consider intussusception before removing a mass lesion of the caput cecum because of the possibility of perforation with secondary peritonitis, abscess and/or fistula formation.[4] Surgical reduction of the intussusception and appendectomy is the preferred course of treatment as reported by Ackerman and Kalkunte.[3] This was the optimal choice in this case since the patient had already been prepared for a

larger procedure and an appropriate incision made. Upon making the correct intraoperative diagnosis, reduction and appendectomy were performed with a subsequent benign postoperative course and excellent result.

Summary

With presentation of a pedunculated cecal mass, intussusception of the appendix should be considered although it is an extremely rare condition. This case was particularly interesting due to the patient's history of a previous appendectomy, when in reality drainage of an intraabdominal abscess secondary to the ruptured appendix had been performed without subsequent interval appendectomy. It is also of interest to note that the appendix showed only mild chronic inflammatory changes rather than the severe inflammatory changes and perforation that lead to the prolonged hospital course in 1938.

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Future Meetings

April

Family Practice Review: Update 1985, Radisson St. Paul Hotel, St. Paul, MN, April 15-19. AMA Category 1 hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Practical Cardiology, 8th Annual Update, Abbott Northwestern Hospital, Minneapolis, MN, Apr. 19-20. Contact: Cheri Galbraith, RN, Ed. Coord., Minneapolis Heart Institute, 2545 Chicago Ave., S., Ste. 700, Minneapolis, MN 55404. Phone: 1-800-582-5175.

29th Annual Symposium on Infectious Disease, Battenfeld Aud., U. of Kans., Apr. 26. CME credit hrs. available. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th and Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

National Conference on High Blood Pressure Control, Palmer House Hotel, Chicago, IL, Apr. 29-30. Fee: $165.00. CME credit hrs. available. Contact: Conference Headquarters, 2121 Wisconsin Ave., Washington, DC 20007. Phone: (202) 944-3176.

May

Health and Addiction, St. Paul Hotel, St. Paul, MN, May 2-3. CME credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Technological Advances in Respiratory Care, Hilton Plaza Inn, Kansas City, MO, May 9-10. 11 hrs. AAFP & AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Heart Attack Prevention, Wilder Forest, Marine on St. Croix, MN, May 19-20. CME credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Gynecologic Oncology, Radisson Univ. Hotel, Minneapolis, MN, May 21. AMA Category 1 credits available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Advanced Cardiac Life Support, Univ. of Kans. Med. Ctr., Kansas City, KS, May 21-22. Fee: $150. 13.5 hrs. AAFP & AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

University Association for Emergency Medicine's 15th Annual Meeting, Radisson Muehlbach Hotel, Kansas City, MO, May 21-23. Fee: $250. Contact: Mary Ann Schropp, Exec. Dir., UA/EM, 900 W. Ottawa, Lansing, MI 48915. Phone: (517) 485-5484.

Current Concepts in Radiation Therapy, Mayo Mem. Bldg., U. of Minn., Minneapolis, MN, May 22-24. Fee: $300. 19.25 hrs AMA Category 1 credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

The Child With Chronic Disease, Battenfeld Aud., U. of Kans. Med. Ctr., Kansas City, KS, May 23-24. 14 hrs. AAFP & AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 29th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Advanced Trauma Life Support, Orr-Major Hall, U. of Kans. Med. Ctr., Kansas City, KS, May 30-31. Fee: $375. 16 hrs. AMA Category I & 15 AAFP credits. Contact: Jody Scott, Dept. of Surg., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-6124.

June

Topics and Advances in Pediatrics, Radisson Univ. Hotel, Minneapolis, MN, June 5-7. Fee: $225. 18.5 hrs. AAFP & AMA Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455. Phone: (612) 373-8012.

Advances in the Care of the Child With Cancer, Los Angeles Hilton, Los Angeles, CA, June 12-14. 15.5 hrs. AMA Category I credits. Contact: Am. Cancer Society, Nat. Conf. on Advances in the Care of the Child with Cancer, 777 Third Ave., New York, NY 10017.

Special Workshop on the Use of the CO_2 Laser in ENT Surgery, Sudler Hall, U. of Kans. Med. Ctr., Kansas City, KS, June 13-14. Fee: $625. 14 hrs. AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 29th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

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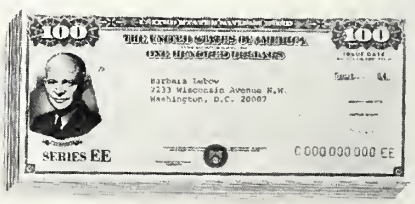

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Reflections on Informed Consent

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WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

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Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

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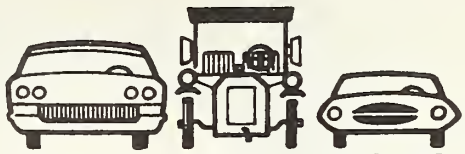

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Reflections on Informed Consent

Jerome W. Freeman, M.D.*

ABSTRACT

The concept of informed consent and its implication for clinical practice is considered.

Issues of informed consent are encountered regularly in every medical practice. Indeed, informed consent is probably an aspect of virtually every physician-patient encounter. Every time a drug is prescribed or other treatment (or non-treatment) is recommended by the physician, the stage is set for establishing the patient's informed consent. The very frequency with which opportunities for informed consent arise warrants that this process should receive major emphasis in the field of medical ethics.

The concept of informed consent is generally premised on the ethical principle of autonomy. The principle dictates that the individual has a right to freedom of choice and action. In the clinical setting, this principle is felt to warrant that the patient has a positive right to an explanation of his health problems and treatment options.

In the discussion of informed consent, two ancillary concepts deserve consideration — paternalism and fallibility in medicine. Paternalism has long been a part of medical practice. It is based on the moral principle of beneficence — i.e. promoting what is good for another. In medicine this has come to mean that the physician does what he or she feels is medically in the best interest of the patient, regardless of whether the patient fully comprehends the medical problem and options. In this setting the principle of beneficence may be construed as taking precedence over the principle of individual autonomy. The physician acts in an almost parental role in an effort to achieve the best medical result. In recent years, the concept of paternalism has received considerable criticism. The contention has been made that the paternalistic approach makes unwarranted infringements upon individual autonomy and disenfranchises patients' active participation in their own care. Thus issues of paternalism repeatedly arise in any analysis of informed consent.

The second concept which is necessarily relevant to an analysis of informed consent is that of medical fallibility. This issue has been effectively explored by Gorovitz and MacIntyre.[1] They argue that error in the clinical practice of medicine is unavoidable on both practical and theoretical grounds. That is, even when medicine is practiced well, some adverse outcomes will predictably result. Clearly this concept has direct relevance to notions of informed consent — particularly in an age of heightened public expectations as to the feats modern medicine can accomplish.

A precise definition of informed consent is of great importance to clinical practice. Beauchamp and Childress[2] offer a comprehensive one, asserting that four elements must be satisfied for true informed consent to exist. These include disclosure of information; comprehension of information; voluntary consent; and competence to consent. In considering these elements, one can readily appreciate that a dialogue between physician and patient is needed for informed consent to occur. The nature of that interchange fluctuates with the degree of paternalism the physician exercises and the patient permits. The content of that communication is necessarily modified by medicine's inescapable fallibility.

Disclosure of information is primarily the responsibility of the physician. This is the portion of the consent process in which the physician details such information as treatment options and therapeutic risks. A physician in the traditional, paternalistic mold might convey little specific information in this setting, dogmatically insisting that a single treatment course is "the right one." On the other hand, an informational discussion between physician and patient can be an excellent opportunity to establish dialogue and collaboration between the two principals of the therapeutic relationship. The physician can try to learn and assuage a patient's fears, and can

* Neurologist, Sioux Falls, SD.

offer explanations for various clinical courses. Moreover, the physician can use this dialogue to communicate the concept that many decisions in medicine are ultimately the result of personal judgements by the physician, and that medicine is fallible and not always productive of an optimal outcome. A general discussion of this character may often be of more benefit to the patient than a meticulous attempt to detail all possible side effects of a treatment or drug. Such disclosure and communication is not detrimental to a therapeutic result. The patient need not lose confidence in his physician merely because he learns that medicine is not infallible. Indeed, the frank discussion of this concept, along with a description of common adverse outcomes or side effects, serves to forcefully demonstrate the physician's honesty and concern. Such discussion can provide the patient with a basis for trusting a physician's clinical judgment, and for enlisting a patient's confidence and support for a treatment plan. Also, this type of interchange clearly reminds the patient that he or she is an active partner in the therapeutic process. The patient can come to view such participation and collaboration as much preferable to passive acceptance of a physician's dictates. And finally, this dialogue enables the patient to better understand and accept those situations in which a good clinical result does not obtain, or when a major side effect of diagnosis or treatment intervenes.

The latter three elements of Beauchamp and Childress' definition of informed consent — comprehension, plus voluntary and competent consent — variously describe the patient. Yet in these areas, too, paternalism plays a major role. The physician must try to make a judgement as to whether a patient truly comprehends the information he has provided. Moreover, it is the physician who must decide whether the patient is capable of both voluntary and competent consent. Often this can be very difficult. If a patient is seriously ill — especially with a disease that might physically or emotionally alter his thought and judgement processes — the physician may feel obligated to make a paternalistic decision to act without the patient's full consent. Often this decision necessitates the judgement that consent be obtained from parties deemed responsible for the patient — i.e. a spouse, parent or other relative.

Despite the importance of patient autonomy, the clinical setting is replete with situations which may limit autonomy, while fostering beneficence. Much of the interplay that develops between the principles of autonomy and beneficence, does so as the physician attempts to assess the patient's comprehension of his own medical problem, and his ability to both voluntarily and competently render consent. This very assessment presupposes and requires an element of paternalism. As Clarke et al. point out: "It is the physician who decides if the patient is rational, what options are acceptable, and frequently, what a reasonable person would want."[3] In a similar vein, Cross et al. note "the asymmetry of power and risk in the physician-patient relationship."[4] The very nature of the clinical interaction seems to mandate that some paternalism will be exercised by the physician.

In summary, the concept of informed consent is of major importance to the clinical practice of medicine. This concept affects how the physician-patient dialogue evolves. Clearly, the foregoing discussion demonstrates that the goal of informed consent is a mutable one, being variably affected by the four elements that constitute consent. Most of the responsibility for assessing these elements and insuring consent resides with a physician. In this sense, some degree of paternalism is an integral part of the clinical process. But the paternalistic instinct, even when arising from beneficence, must be moderated by the patient's right to autonomy and to participation in his own health care decisions. The challenge to the physician is to strike the appropriate balance, in the pragmatic and fallible clinical realm, between patient consent and physician paternalism.

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Thirty Year Old Caucasian Waitress With Persistent Upper Lobe Infiltrate of Two Months Duration

Mark P. Mogen, M.D.*
Discusser

John F. Barlow, M.D.†
Editor

Case #1061728 (84-4659)

This 30 year old caucasian waitress was admitted to Sioux Valley Hospital because of a persistent right upper lobe infiltrate of two months duration.

Two months prior to admission the patient developed a mild cough and upper respiratory tract symptoms. She was placed on ampicillin for pneumonia but was switched to erythromycin two weeks later when the chest x-ray abnormality did not respond to therapy. The patient had progressive fatigue and lethargy with dull right sided chest pain and moderate dyspnea. There was occasional cough with the production of greenish sputum without hemoptysis. The patient had anorexia and a 30 pound weight loss over the preceeding two months. There was no history of fever or chills, sore throat, or headache. The patient said that she had a history of right upper lobe pneumonia two years previously but this had responded to therapy. The patient had smoked seven to eight packs per year until the onset of respiratory symptoms. She was taking no medications. There was no significant abnormality on review of systems. There was no history of occupational exposure to dusts.

PHYSICAL EXAMINATION: Slightly obese, alert, oriented female, pulse 100/minute and regular, respirations 20/minute and regular, blood pressure 122 systolic and 70 diastolic, weight 215 pounds (98 kg). Examination of the skin, head and neck were unremarkable. The chest was clear to auscultation and percussion. The heart was not enlarged and there was a regular rhythm with no murmurs or abnormal sounds. Examination of the abdomen revealed no spasm or palpable organs or masses. Examination of the extremities and neurologic examination showed no abnormality. The patient had a buffalo hump but no striae.

LABORATORY DATA: Urinalysis on admission — yellow, hazy, specific gravity 1.015, pH 7.0, negative for protein, glucose, ketones, bilirubin, hemoglobin; sediment 3-4 leukocytes per high power field, many squamous epithelial cells and bacteria. Admission hemoglobin 11.0 gm/dl, hematocrit 35 vol/dl, red count 4.48 × 10^{12}/L, mean corpuscular volume 78 fl, mean corpuscular hemoglobin 26 pg and mean corpuscular hemoglobin concentration 31%. The red cells were characterized as slightly microcytic and normochromic. White count was 18.8 × 10^{9}/L with a differential count of 76% segmented neutrophils, 2% neutrophilic bands, 20% normal lymphocytes, 1% monocytes and 1% basophils; platelet count 546 × 10^{9}/L, erythrocyte sedimentation rate 126 mm per hour (normal 0-20 ml per hour). A fluorescent antinuclear antibody test (FANA) was negative. Lactic dehydrogenase (LD), alkaline phosphatase, aspartate aminotransferane (AST, SGOT), total bilirubin, total protein, calcium, phosphorus, glucose, blood urea nitrogen, creatinine, uric acid, and angiotensin converting enzyme were within normal limits. Cholesterol was 144 mg/dl (slightly reduced). Serum IgG and IgM were within normal limits, IgA was elevated to twice the normal range at 618 mg/dl. C3 and C4 were within normal limits. Tests for cryoglobulin and rheumatoid factor were negative. An intermediate mantoux tuberculin test (PPD) showed no induration. The patient did have a reaction to the mumps skin test. A bone marrow examination showed a microcytic normochromic anemia with thrombocytosis in the peripheral blood and general hypercellularity with myeloid and megakaryocytic hyperplasia, mild plasmacytosis and increased iron stores. Pulmonary function studies showed a markedly reduced forced vital capacity and flow rate. The patient was felt to have a severe restrictive lung impairment. A prothrombin time and partial thromboplastin time were within normal limits. Serum electrolytes showed no abnormality. Multiple arterial blood gas studies showed a pH range from 7.40 to 7.48 with low normal to slightly decreased PCO_2 and normal total CO_2 content values. The patient's PO_2 (not on oxygen) was 62 torr with oxygen saturation of 91% and was raised to over 200 torr with 98% saturation on oxygen. Chest film showed a normal heart and great vessels. There was a considerable amount of infiltrate and consolidation involving the upper one-half of the right chest which extended into the hilar area and there was a moderate amount of patchy-type infiltrate involving the left lower lobe (Fig. 1). Electrocardiogram showed interventricular conduction delay and nondiagnostic ST/T changes. A bronchoscopy showed inflammatory changes and edema. Bronchial brushings and sputum cytologies were negative for malignant cells. Multiple blood cultures and cultures of sputum for fungus and

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mycobacteria were negative. No acid fast bacilli were seen on the smear. A gram stain of the sputum smear showed a few segmented neutrophils, but no predominant organisms. Culture of sputum showed no pathogens. Serologies for mycoplasma and legionella were negative. Serology for fungus organisms was drawn but the results were not reported back before surgery. An open thoracotomy was performed.

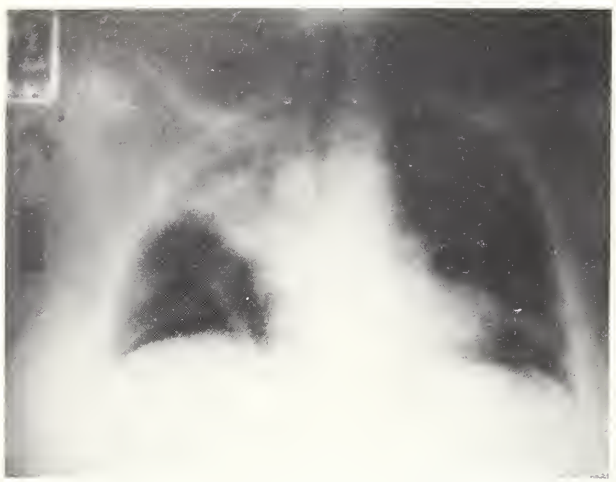

Figure 1
Right upper lobe infiltrate.

DR. MOGEN: The problem is one of a 30 year old female with a persistent right upper lobe infiltrate. The causes of infiltration in the lungs can be varied. Some of the basic reasons are classified into the groups as follows:

1. Infections (ranging from viral diseases to a bacterial and fungal etiologies)
2. Occupational causes (such as inhalation of certain mineral dusts or chemical fumes)
3. Neoplastic causes
4. Congenital abnormalities
5. Metabolic causes (including uremia, hypercalcemia)
6. Physical injuries (such as radiation injury, oxygen toxicity)
7. Circulatory causes (such as pulmonary embolism, fat emboli, pulmonary edema)
8. Immunological causes

In reviewing this case, most of these categories may be excluded due to specific clinical, historical or laboratory data. This patient was young, with few previous health problems given prior to her current presentation, tending to exclude a majority of the many causes such as neoplasm, circulatory causes and congenital abnormalities. Also, she had no history of prior exposure to dust or chemicals which excludes occupational causes. There is a lack of previous history for physical injuries which excludes that possibility. Laboratory and clinical information also makes metabolic causes unlikely. Actually, with the clinical presentation given of upper respiratory infection symptoms, a productive cough of green sputum, the complaints of dull chest ache and moderate dyspnea combined with the elevated white blood cell count, sedimentation rate and chest x-ray findings, one is led to chronic infection as a prime consideration.

In this patient, blood cultures, sputum cultures for bacteria, acid-fast bacilli, and fungi all were unable to demonstrate a causative agent for a persistent chronic infection. With this lack of culture findings plus lack of an antibiotic response, typical bacterial infections seem unlikely. Some of the more atypical type pneumonias also are ruled out by laboratory tests and clinical information — more specifically, Mycoplasma pneumoniae and Legionella pneumophilia by negative serologies and lack of response to erythromycin.

Tuberculosis was generally excluded by the negative PPD in light of normal cell mediated immunity and negative studies for acid fast bacilli smears and cultures. Viral disease probably would not have produced such a persistent infiltrate or an elevated leukocyte count. All of this leads to the most likely etiology of this patient's pulmonary infiltrates being chronic mycotic or fungal infection despite negative cultures. The fungal serologic tests, however, were pending at the time of surgery. Fungi can sometimes be difficult to isolate and may require actual biopsy of infected tissue. Thus, the rest of this discussion will be centered on the various differential features of mycotic lung infections.

Knowledge of fungal diseases has been present since 1839, when Schoenlein and Gurby described the dermatophytic fungus, Trichophyton schoenleini as a cause of a characteristic scalp infection. At the time Candida albicans was described as causing the infection of thrush. In the late 1800's a gentleman named Posadas described the pulmonary lesions that could be caused by Coccidioides immitis. Knowledge of pulmonary mycotic infections continued to accumulate especially in the last 50 years.

Fungi differ from bacteria in three major respects. First, they are eukaryotes, having a discrete nucleus bounded by a membrane containing several chromosomes, as opposed to the prokaryotic composition of bacteria. Also fungi may reproduce both asexually and sexually with the sexual state referred to as the perfect state and the asexual phase as the imperfect state. Finally, and maybe most significantly, fungi may be biphasic or dimorphic, in that they can exist in mycelial (hyphal) form in nature and in a completely different yeast form in the infected host. In fact, it has been suggested that fungal infections in animals are really "accidents" in that the fungi do

not need animals to survive, and the benefits derived from human or animal infection for the fungus and its life-cycle are unknown. Many fungi are saprobic and mainly attack immunocompromized hosts.

The clinical presentation of pulmonary mycotic infections can be extremely varied but there can be some clues in the illness which can further implicate fungi. Mycotic pneumonias are not generally sudden in onset with shaking chills and high fever as are the more common bacterial infections but tend to be more chronic and indolent persisting for months and show a lack of response to customary antibiotic therapy. Nocardia and Actinomyces are exceptions but, as we shall see, these organisms, once thought to be fungi, are now classified as bacteria.

Fungal infections are often in a disseminated status before they are diagnosed. The pulmonic disease may be identified only after an extrapulmonary manifestation of fungal infection, such as skin lesions, meningitis, etc., comes to medical attention. Finally, the most characteristic trait of fungal infections is that there are multiple variations in symptoms and a broad range of disease severity.

In the discussion of mycotic infections, usually the agents of actinomycosis and nocardiosis are included in the discussion as they may resemble fungi in chronic infections. These agents, usually Actinomyces israeli and Nocardia asteroides, have profound differences from fungi in that they are gram-positive bacteria, develop thin branching filaments, are susceptible to antimicrobial agents used against bacteria such as sulfonamides and penicillin, and have the ability to induce a neutrophilic response in common with other bacteria.

Actinomycosis is usually caused by the endogenous organism, Actinomyces israeli, or occasionally by other actinomyces species. There are three types of infections — cervical-facial, abdominal and thoracic. Of pertinence to this discussion is the thoracic type of infection, which generally exists as a pulmonary abscess with formation of sinus tracts. It is suppurative with the abscess draining percutaneously or even forming an empyema with involvement of chest wall, bone and cartilage. Pulmonary actinomycosis usually occurs secondary to aspiration or a break in the mucosa since the causative organism is part of the normal flora of the human upper respiratory tract. It responds to penicillin. This infection is not a likely possibility in this case.

Nocardiosis, caused usually by Nocardia asteroides or rarely other nocardial species, is a related infection, ⅔ of nocardial infections are primarily pulmonary. The organism is inhaled exogenously from the environment. Patients may present with pleural pain, dyspnea, and productive cough which is usually bloody and purulent. Chest x-ray can often show a lobar pattern of consolidation which is frequently bilateral. Initially the disease can behave like a bacterial pneumonia but will then progress to cavitation or radio-dense areas on chest x-ray despite antibiotic therapy. Significant sequelae of the pulmonary infection include brain abscesses, meningitis, subcutaneous lesions, and hematogenous spread to other organ systems. Nocardiosis is predominantly a disease of suppuration, necrosis and abscess formation and occurs mainly in immunosuppressed patients who have malignancy, chronic disease or are on steroid therapy. Treatment involves surgical drainage of the empyema or abscess with prolonged chemotherapy added. Usually the drug of choice is one of the sulfonamide class. Neither nocardiosis or actinomycosis fit the picture in this case.

We now return to the real fungi (eumycetes). Probably one of the least likely possibilities is cryptococcosis, caused by Cryptococcus neoformans which usually produces a subacute or chronic meningoencephalitis, although like many infectious agents, it is acquired through the respiratory route by inhalation. Usually pulmonary cryptococcosis is asymptomatic, but can vary from a mild transient, self-limited infiltrate to a persistent one in some patients with previous pulmonary disease. In this disease, systemic complaints such as fever, weight loss, anorexia and malaise are much less common than the other mycoses. The pulmonary findings can be a persistent cough, dull chest ache with the chest x-ray showing one or more often well circumscribed infiltrates. The sputum cultures are positive only in about 10% of the cases and serum antigen testing is positive only about ⅓ of the time. Biopsy is often required for diagnosis.

Another unlikely etiologic agent in this case would be Aspergillus fumigatus, the most common member of the Aspergillus species to cause aspergillosis. This fungus is ubiquitous in the environment, and has basically three types of presentation. The first type is a fungus ball, a mass of mycelial elements filling an old pulmonary cavity. This can often be seen on chest x-ray as a round nonprogressive density with a peripheral halo. Although often not progressive, severe hemoptysis may require surgical excision. Another form is allergic bronchopulmonary aspergillosis which may be secondary to endobronchial colonization with aspergillus in a patient with pre-existing asthma. These patients develop a hypersensitivity reaction with elevated IgE antibodies to the aspergillus, wheezing, mucus plugging, and sometimes transient pulmonary infiltrates. The disease may range from mild to severe. Finally, one can have a more systemic or disseminated aspergillosis seen in immunosuppressed individuals.

Given these typical presentations of aspergillosis, it is an unlikely etiology of this present patient's pulmonary infiltrates. A chronic form of pulmonary aspergillosis in alcoholics and patients with chronic lung disease has been described but, although the chest x-ray picture may fit, the patient does not fit into the usual groups of patients with chronic pulmonary aspergillosis.

Valley Fever or San Joaquin Fever is another pulmonary mycosis. This is coccidioidomycosis caused by inhalation of Coccidioides immitis. The spores of this organism are indigenous to the areas of the southwest United States and Mexico, usually causing a travel history to play a significant role in its diagnosis. Coccidioidomycosis has a variable clinical picture, as do most of the fungal infections. It can be a subclinical infection ranging from an acute self-limited to a chronic infection. Generally, the patients are asymptomatic or have mild respiratory symptoms usually ascribed to the "flu." The acute disease is manifested 1 week to 1 month after inhalation of spores by pleuritic pain, fever often without frequent coughing. Hilar and paratracheal lymph nodes are enlarged and 20-40% of patients may develop erythema nodosum. On chest x-ray the infiltrates are usually in lower lobes and nodular with hilar and paratracheal adenopathy. A coin lesion can be a residual finding in 10% of the cases. Disseminated infection is uncommon constituting only 0.5% of symptomatic patients, often affecting immunosuppressed individuals, blacks, Phillipinos, Native Americans or pregnant women. Twenty-five percent of these disseminated cases get meningitis, which is the major cause of death. There is a skin test, coccidioidin, which is positive during the acute disease. Also serologic testing is specific with a precipitin and a complement fixation text available. The precipitin usually will revert to normal several months after the acute infection. Eosinophilia can be present and a patient usually improves in 2-3 weeks. A skin test which becomes negative and a rising complement fixation titer or positive immunodiffusion test usually presage dissemination. There is usually no treatment needed, though some may require amphotericin B if the disease is persistent to try to prevent the disseminated state. Of course, amphotericin B is used in the disseminated state as primary treatment.

Histoplasmosis is seen in this area as we are close to an endemic area, the Mississippi River Valley and east central USA. The spores are inhaled and small enough to go to the alveoli. Spores are numerous in moist soil contaminated with bird and bat droppings. Once inhaled into the alveoli, spores can produce a granulomatous type reaction, sometimes showing necrosis mimicking tuberculosis. The granulomatous disease may or may not be centrally calcified. Clinically there is a cough, fever, and malaise with chest x-ray showing one or more areas of pneumonitis with associated hilar adenopathy. Although predominantly this presents as an asymptomatic or mild infection, it can sometimes progress to a chronic pulmonary histoplasmosis which persists over weeks or months with weight loss and productive cough. Chest x-ray may have apical infiltrates which are unilateral or bilateral and fibronodular. One-third of these patients will stabilize or improve, the rest will have an insidious progressive course. There can be an acute disseminated form of histoplasmosis which may be mistaken for miliary tuberculosis. Common findings consist of fever, hepatosplenomegaly, weight loss, jaundice, and leukopenia. A diagnosis of this disease can be suspected on serological or clinical grounds, but definitive diagnosis again is by culture and histology. There are frequent false positive and negative findings with both the skin testing and serologic testing. As far as treatment is concerned, none is generally needed, except in the case of disseminated or fibronodular disease, in which case amphotericin B is the cornerstone of treatment as it is in most systemic mycoses.

Finally, I will discuss blastomycosis (North American) caused by Blastomyces dermatitidis. This disease is uncommon but occurs sporadically or in small outbreaks in the northeastern, central, and mid-Atlantic United States. The illness most often presents with persistent pneumonia, ulceronodular skin lesions, or a combination of the two. Inhalation of the fungus causes the disease, but a reservoir is not known for certainty, though it is felt to be found in the soil. One-third of these cases will present as a detectable infection in one organ which is usually the lung or the skin. Even in multi-organ infection skin and lung involvement are so common that two-thirds of the infections will have pulmonary involvement with an equal proportion of these having skin involvement. The pulmonary process can present as a subacute consolidation resembling bacterial pneumonia. There is progression to pulmonary consolidation and a fibronodular contracted pattern with one-fourth of these cases showing cavitation. Usually posterior segments of the upper lobes are most frequently involved, but the mid and lower lung fields can be infected more frequently than in tuberculosis.

Also, as above, skin lesions are common and can be described as verrucous raised and serpiginous in character. Gastrointestinal lesions are rare as compared to Paracoccidioidomycosis (South American blastomycosis). Paracoccidioidomycosis is endemic only to the latitudes of 20°N in Mexico through the 34°S latitude in Argentina.

Diagnosis of North American blastomycosis is from culture of tissue since skin testing and serologic testing are not really reliable. Treatment of this disease again involves amphotericin B with a total dose being around 2 grams. Various reports of mortality rate range from 20-90%.

These last three diseases discussed seem to be the most plausible causes of pulmonary infiltrates in this patient. Since histoplasmosis is often a granulomatous type disease and coccidioidomycosis being one with generally a significant travel history, neither of which are readily present in this case, the provisional diagnosis will be blastomycosis.

Dr. Mogen's Diagnosis
Pulmonary Blastomycosis
(North American)

DR. BARLOW: We received two biopsies of lung and a biopsy of pleura. The major diagnostic findings were in the lung biopsy from the right upper lobe. Grossly the tissue was gray white and firm measuring 2 × 1.5 × 0.8 cm. Microscopically there were confluent granulomatous foci with central suppuration and necrosis. There was no true caseation necrosis (Fig. 2). Special stains and culture for mycobacteria were negative but Grocott methenamine silver stains showed a large thick walled often double contoured organism which showed characteristic broad based buds (Fig. 3). After approximately 2 weeks, tan mycelial-like growth was observed on blood and Sabourauds dextrose agar. Small white hemolytic colonies also grew on blood agar incubated at 37°C. The latter showed broad based buds and double contoured walls typical of the dimorphic fungus, Blastomyces dermatitidis (BD).

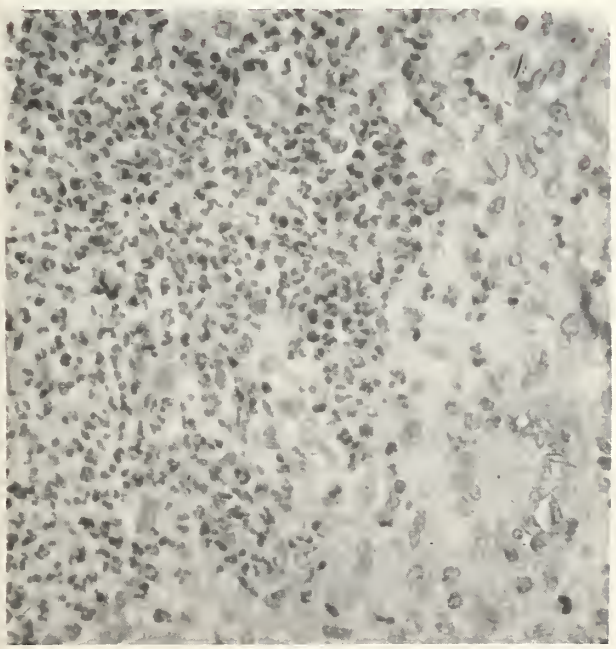

Figure 2
Giant cell and suppurative reaction in lung (H&E).

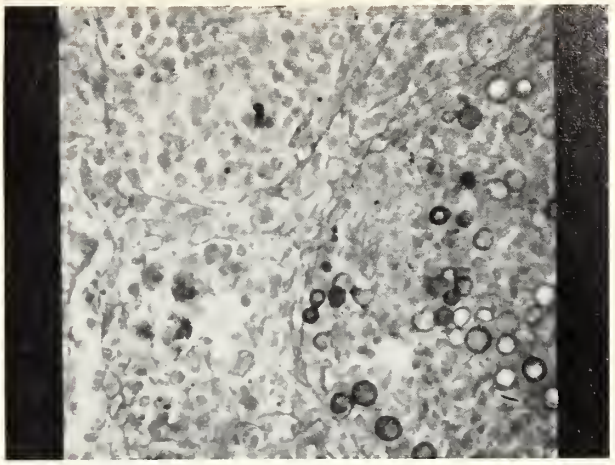

Figure 3
Budding yeast cell with broad bases and thick walls typical of Blastomyces dermatitidis.

The identity of the organism was confirmed by Center for Disease Control in Georgia. The tissue reaction and morphology of the organism on special stains were typical of blastomycosis. In tuberculosis, histoplasmosis, or coccidioidomycosis the tissue reaction often shows caseous necrosis rather than suppuration with segmented neutrophils seen in the blastomycotic pyogranuloma. The organisms were too large for Histoplasma capsulatum (HC) and did not show spherules with endospores as seen with Coccidiodes immitis (CI). Cryptococcus neoformans (CN) may elicit several types of tissue reaction in the lung and the organisms could be confused on special stains but CN often shows a capsule with a clear space about the budding yeast forms and is smaller and more variable in size with a thin attachment of buds to the parent cell. The dimorphic growth at the two temperatures of incubation and morphology of the yeast form make the diagnosis definite.

FINAL ANATOMIC DIAGNOSIS
PULMONARY BLASTOMYCOSIS

BD was first isolated by Gilchrist in 1894 and was first thought to be limited to North America but it is also widely distributed in Africa, Central and South America. It may produce localized cutaneous disease from accidental inoculation into the skin as a laboratory accident but in nature the disease is acquired by inhalation of spores from soil probably contaminated with avian or animal excreta. The lung is the first and most frequently affected organ but many other organs including the skin, central nervous system, prostate epididymis, bone and other organs are involved in dissemination of the disease.

It is to be noted that single or multiple nodular or ulcerative lesions of the skin are quite common and these are secondary to dissemination from the original pulmonary source as is involvement of any other tissue or organ system in most cases.

Diagnosis of the disease is usually by special stain or culture of secretions or tissue. The dimorphic nature described above may be confirmed or the mycelial phase may be subjected to an exoantigen test which is also diagnostic. This test allows more rapid diagnosis because it can be performed directly on an isolate. In most circumstances conversion of the mycelial to yeast forms or vice versa may take several weeks to complete. The mycelial phase in itself does not show diagnostic morphology and can be mimicked by other fungi. Usually only the asexual (imperfect stage) reproduction is seen. Occasionaly sexual reproduction may be identified in BD and the name Ajellomyces dermatitidis is given to this perfect phase of the organism.

We know considerably less about the epidemiology of blastomycosis compared to histoplasmosis or coccidioidomycosis. One reason for this has been the difficulty in isolating BD from the soil in contrast to HC or CI. Although outbreaks of blastomycosis have been associated with construction and contact with the outdoors explaining the male predominance of the disease, how inhalation of spores takes place is not exactly known. Dogs have been known to develop blastomycosis and may be a reservoir for the disease. A second reason for our poor understanding of the epidemiology of the blastomycosis is that there is no sensitive and specific skin test or serum serologic test for BD in contrast to HC and CI. Skin and serologic tests for the latter two organisms have shown that in endemic areas for HC and CI asymptomatic or transiently symptomatic infections are extremely common but there is not good evidence for or against this observation in blastomycosis. However, acute transient infections have recently been described in blastomycosis but their frequency is unknown. Foci of infection in other organs with negative chest films have also been described possibly resulting from reactivation of a hematogeneous focus of past transient disseminated BD infection.

Diagnosis of blastomycosis is also difficult as there is not a reliable serologic test. Morphologic identification in tissue and culture are the only methods of diagnosis available. Interesting in this case, the immunodiffusion test for BD was positive but negative for HC and CI. This is rather unusual since one should not depend on serologic tests for the diagnosis of BD in contrast to HC and CI.

Treatment is best accomplished with amphotericin B.

*DR. TOM GAECKLE: The erythrocyte sedimentation rate seems high for this disease.

†DR. KEN JOHNSON: The patient had a buffalo hump but no other signs of hypercortisolism. One wonders about excess steroids predisposing to the infection.

DR. BARLOW: Follow-up of the patient has been excellent. The patient has never developed any skin lesions. She is being treated with amphotericin B and the pulmonary infiltrates are clearing slowly. It is interesting that there have been six cases of blastomycosis diagnosed in the Sioux Falls area in the last six months.

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It never ceases to amaze me how the Federal Bureaucracy in its infinite wisdom continually improves the "perks" of their own, including retirement, at the cost of what is left for John Q. Public. The continued failure to really address the problems of delivery of health care to the truly medical indigent, while lumping an alphabet soup type of programming to fit a Federal schedule is appalling. The managing of the medical programs seems to be entirely at the whim of an untrained "clerk" who can read the letter of the word, without understanding what it says. Example: to the Medicare patient — "You could have been treated by a less expensive type of care" — payment denied.

One of the biggest frauds as far as I'm concerned is the fact that at age 65 all health care insurance reverts to Medicare — no means test — no option of other forms of private health insurance available. Where do the third party private insurers fit into this scheme? Small wonder that most of the big skyscrapers of Megalopolis are owned by insurance companies. I wonder what would happen to the "industry" if they had a "fee freeze" on all policies? Unfortunately, there is no simplistic answer to the many problems of health care, but I do think we could do a better job without unrealistic Federal restraints that really do not help many of the needy.

Maybe because I live in South Dakota in the real world, I don't understand the innuendos of "Megalopolis." However, I still feel that it's a very cold day in July when someone in need is turned down for medical care. Instead of some of the "band-aid" approaches, how about a cooperative approach from the bureaucracy with organized medicine to honestly try to solve the problem.

Howard L. Saylor Jr.

Howard L. Saylor, Jr., M.D., President
South Dakota State Medical Association

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A Case of Deep Venous Thrombosis

L. M. Gutnik, M.D.*
Lee Engelbrecht†

We wish to present a case report showing the importance of non-invasive venous testing.

The patient is a 27 year old white female who was admitted to the hospital with symptoms that were very atypical of any specific diagnostic problem. She had pain in her low back, left leg, and groin. Her left thigh was slightly larger than her right and was tight. Because she was on birth control pills, her local doctor wondered if she might not have a deep venous thrombosis. The emergency room physician felt that her pains were most compatible with sciatica. He felt that there was little chance of thrombophlebitis. He also felt that a pelvic or ovarian vein thrombosis should be ruled out. The gynecologist thought that her problems were neuromuscular in the left upper abdomen and recommended discontinuing her birth control pills until a diagnosis was confirmed.

Interestingly enough, the Doppler examination performed on this patient was markedly abnormal. There was no venous augmentation heard throughout the entire left leg (Fig. 1). The plethysmography done by routine method employed at this hospital with MedaSonics equipment was found to be normal (Fig. 2). Because of the discrepancy and a markedly abnormal Doppler examination, the patient had a venogram (Fig. 3). The venogram showed extensive deep venous thrombosis of the left leg.

	CFV		SFV		POP. V		PTV	
	R	L	R	L	R	L	R	L
Spontaneous	+	0	+	0	+	0	+	0
Phasic	+	0	+	0	+	0	+	0
Augmentation	+	−3	+	−3	+	−3	+	−3
Competent	+	−1	+	−1	+	−1	+	+
Non-pulsatile	+	+	+	+	+	+	+	+

Signals: + = yes
0 = no
−1 = mildly reduced
−2 = moderately reduced
−3 = severely reduced

COMMENTS: Continuous flow was heard while accessing each location on the left leg.
Miles Cramer Formula: VO .5-2 = 4/3 ($V0_2$) − 1/3 ($V0_{.5}$)

Figure 1

Venous Doppler Examination

We decided to further evaluate why our plethysmography was normal. We sent all materials, strain gauge curves, and venogram to Miles Cramer in Seattle, WA. By applying his method of plotting venous capacitance and venous outflow,[1] we were able to distinguish the thrombotic leg (Fig. 4). Since this case, we have switched outflow analysis to the Miles Cramer method[1] which has proven to be more accurate.

The patient was treated with Heparin, bed rest, elevation, heat and oral coumadin. Her birth control

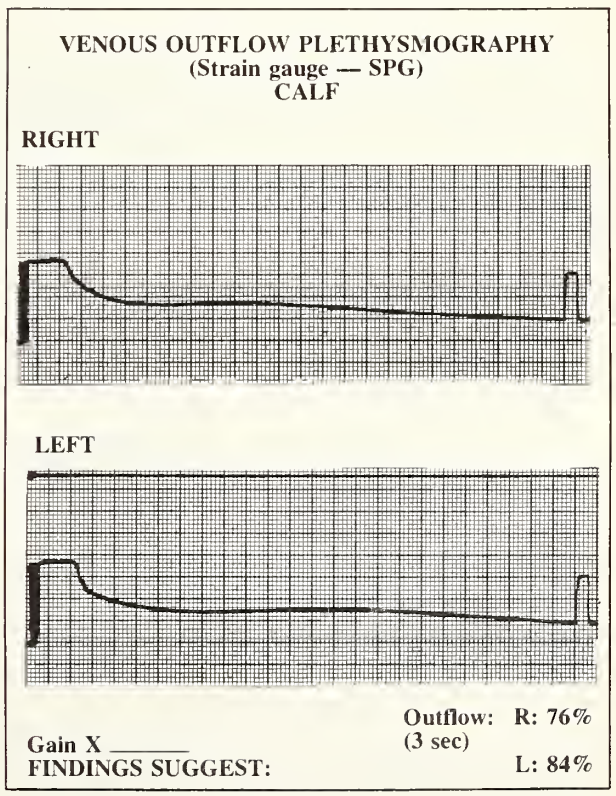

Figure 2

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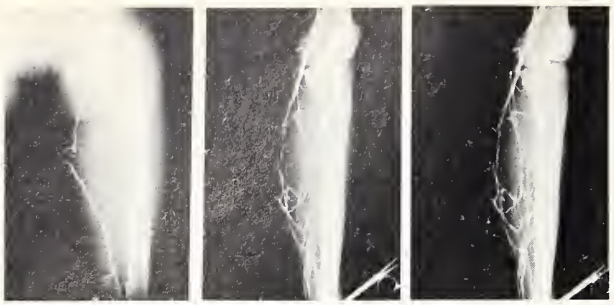

Figure 3

LEFT LEG VENOGRAM: The patient advised fully as to the nature of this procedure. Using sterile technique a 23 gauge needle was inserted to a vein in the dorsum of the left foot. Contrast media instilled and appropriate filming undertaken. Only one of the pairs of deep veins in the left calf are filled and there is partial filling of the popliteal vein. Deep femoral vein of the left thigh does not fill at all and there is evidence of occlusion of the left iliac system as well with filling of pelvic collaterals.
IMPRESSION: Extensive deep vein thromboses left leg and left side of the pelvis.

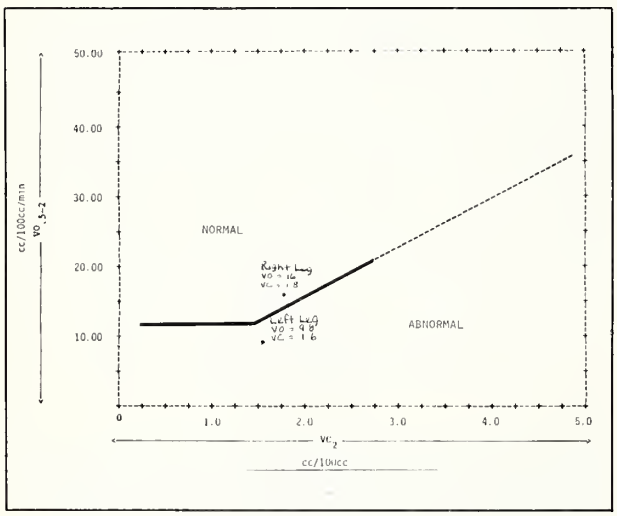

Figure 4

pills were discontinued, and she left the hospital without difficulties.

This case is illustrative of (1) the difficulty in diagnosis of deep venous thrombosis and, (2) the importance of non-invasive venous testing.

Acknowledgment

Thank you to Miles Cramer for his assistance.

REFERENCES

1. Cramer, M., Beach KW, Strandness, DE: The detection of proximal deep vein thrombosis by strain gauge plethysmography through the use of an outflow/capacitance discriminant line. **Bruit.** 7:17-21. Dec. 1983.

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American Academy of Family Physicians

REPORT ON SURVEY OF 1984 GRADUATING FAMILY PRACTICE RESIDENTS

The total number of graduates surveyed was 2264. Of this number 1823 (81%) responded. Of these respondees, 1815 indicated the type of practice arrangement and 1556 specified the size of the community in which they plan to serve. A summary of the results as of July 1984 follows.

The data from 1977, 1978 and 1979 has been re-analyzed to conform with the 1980-1984 statistics. Caution must be exercised in comparing data previous to 1977 because of changes made to data analysis. However, the revised 1977-1979 data may be directly compared with the 1980-1984 data with confidence.

PRACTICE ARRANGEMENTS OF 1984 GRADUATING RESIDENTS

Type of Practice Arrangements	*Number of Reporting Grads*	*Percentage of Total Reporting Grads*
Family Practice Group	369	20.3%
Multi-Specialty Group	164	9.0%
Two-Person Family Practice Group (Partnership)	272	14.9%
Solo	230	12.7%
Practice (arrangement not specified)	75	4.1%
Military	124	6.8%
Teaching	43	2.4%
USPHS	243	13.4%
Emergency Room	98	5.4%
Hospital Staff	19	1.5%
Research	4	.2%
Administrative	4	.2%
Further Training	42	2.3%
Fellowship	30	1.6%
None of the above	96	5.2%
	1,815	100.0%

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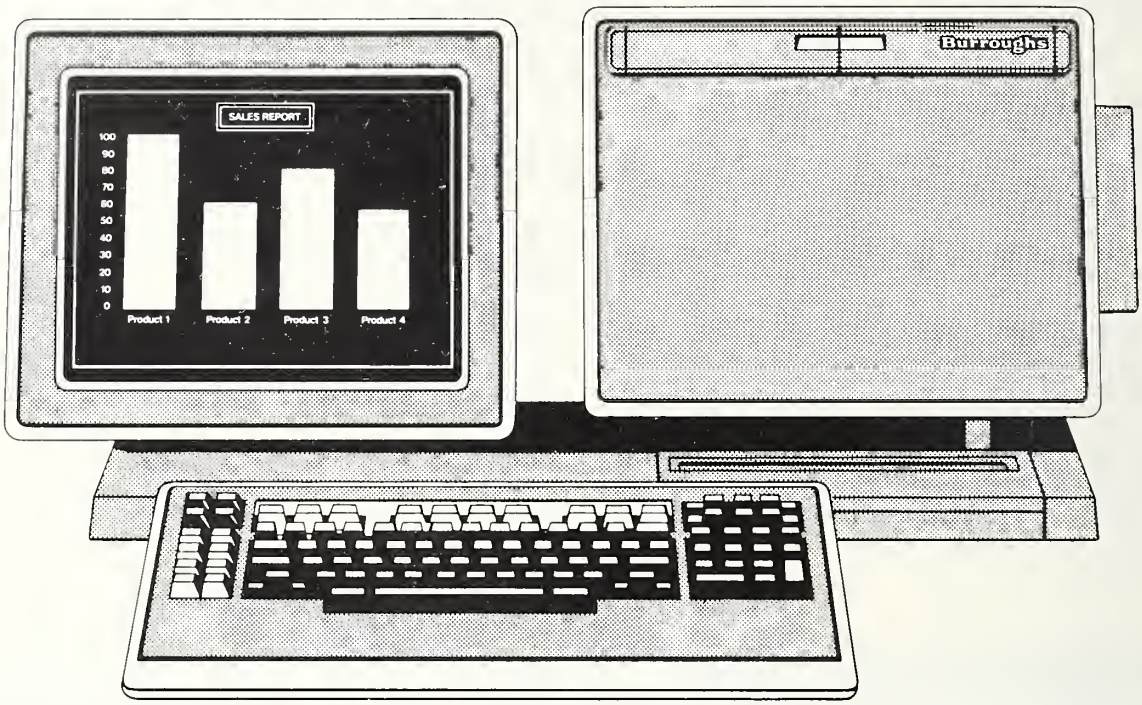

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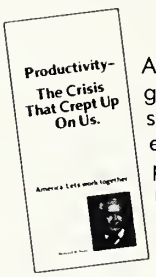

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South Dakota Physician Location Factors

Gary R. Leonardson, Ph.D.*
Donald G. Brekke†
Doneen B. Hollingsworth‡
Stephen W. Cook§
Craig McClain¶

ABSTRACT

South Dakota continues to have fewer physicians per patient population than any other state. Analysis of attributes of 232 graduates of the two year program at the University of South Dakota School of Medicine was undertaken. Physicians who selected South Dakota practice sites, and their spouses, had generally grown up in small or rural communities. Somewhat over 50% had their residency training in South Dakota or a contiguous state. Most of those who located in this state are engaged in Family Practice or Internal Medicine.

INTRODUCTION

The placement of physicians in rural areas continues to be a critical problem. In South Dakota there were as of 1980, fewer physicians (102 per 100,000) than in any other state.[1] The average number of physicians per capita in the United States is 202 per 100,000 people.[2] The following study was conducted to determine the factors associated with the establishment and retention of physicians in South Dakota.

METHODOLOGY

A total of 232 medical students who graduated from the University of South Dakota School of Medicine between 1969 and 1973 were surveyed to ascertain their places of practice and residency, field(s) of specialization, family status and other related information. There was only a two year medical program at the University of South Dakota during that period. Of the contactees, 183 or 78.9% responded to either the original letter and questionnaire or a follow-up cover letter and second, identical questionnaire. Only one of the 183 returned questionnaires was not used in the analysis since its requested information was not sufficiently complete. From this point on, the term "responding physicians" will include only the 182 physicians who provided usable information.

Of the 182 physicians who responded, 138 or 75.8% were living and practicing outside of South Dakota. This group of physicians lived in 32 states throughout the nation. States having sizeable numbers of physicians from this sample included Minnesota with 24 or 13.2%, California with 18 or 9.9%, Wisconsin with 11 or 6.0%, and Colorado and Texas each with 8 or 4.4%.

To better clarify information about University of South Dakota School of Medicine graduates who have remained in South Dakota (hereafter called South Dakota physicians) they have been analyzed both separately and comparatively to USDSM graduates who have located in other states (hereafter referred to as non-South Dakota or out-of-state physicians).

The first section of the survey instrument is largely devoted to questions of a demographic nature. The later segments report results of the physicians' perceptions about factors relating to their place of residency and current practice location.

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¶ Research Associate, Office of Educational Resources, USD School of Medicine.

Community Size — Residing and Office

The physicians were asked two questions about the size of community in which they lived and in which their office was located. As might be expected, most of the responding physicians (84.9%) lives and practices in the same community. Those who lived in a different size community nearly always chose to live in a community smaller than that in which they actually practiced.

Over half (54.5%) of the 44 South Dakota physicians responding lived in a community of 50,000 to 99,999 people; 18.2% lived in a town of 10,000 to 24,999; and 11.4% resided in a town with less than 2,500 people.

Two-fifths (41.3%) of the 138 doctors practicing outside South Dakota lived in cities of over 100,000 people, while 13.8% resided in communities of 50,000 to 99,999 and 18.8% lived in cities of 10,000 to 24,999. Only 5.8% of the doctors practicing outside of South Dakota lived in towns with less than 2,500 people.

All percentages reported above are based on those individuals who responded to a questionnaire sent in the summer of 1983. As might be expected, physicians who located outside South Dakota tended to live in larger communities than those who resided in-state. There was a statistically significant difference (chi square = 39.84, p = .001) in community size for the two groups of physicians, based on frequency data grouped into four categories i.e., less than 5,000 people, between 5,000 and 24,999, between 25,000 and 99,999, and over 100,000 people.

Size of Community where Physician was Raised

A review of the literature dealing with physician location demonstrates the very significant impact of a doctor's background on where he or she decides to practice.[3-8] Cooper, et al., demonstrated that practice in a small community was more likely to be the choice of doctors who grew up in small communities than of those who did not.[3] Madison summed up this very important factor of physician location with this comment:

> Research findings indicate that physicians have been socialized early in life in the kind of environment in which they now practice. This of course has been shown several times before and is now part of conventional wisdom.[8]

The current geographic location of practices (whether South Dakota or non-South Dakota) was not related to the size of the community in which the physician was raised. However, there was a significant relationship (r = .21, p = .006) between the size of the community of practice and the size of the community in which the physician was raised. This finding corroborated the results of the studies mentioned above. That is, physicians from rural areas were more likely to practice in rural areas than were physicians raised in non-rural areas. Conversely, medical doctors raised in non-rural areas were more likely to return to the same social environment.

Size of Community where Spouse was Raised

The role of the spouse has been considered in several studies[6, 9, 10] as a determinant in the choice of practice location. Cooper, et al.,[9] stated the place of rearing of both husband and wife was significantly related to physician location. Families in which both partners were from the same background had striking preferences to live in an area similar in size to where they grew up.[6]

The spouses of physicians in South Dakota were generally raised in smaller communities than those outside of the state: 61.9% of the South Dakota spouses grew up in towns of less than 25,000 people; 45.8% of the spouses of out-of-state physicians were raised in similarly sized communities. Almost one-third (30.5%) of the out-of-state spouses were raised in cities with over 100,000 people, while 19.0% of the doctors' spouses in South Dakota grew up in cities of this size. These findings seem to indicate that physicians who located in-state have spouses who came from less populated areas than those who resided elsewhere.

Marital Status

All but two (95.5%) of the South Dakota physicians were married, whereas 84.7% of the physicians practicing outside of the state were married.

Spouse's Occupation

The spouses of the physicians surveyed in both South Dakota and the rest of the nation had almost identical occupational patterns. The largest percentage in each occupational group was homemakers — 35.7% of the surveyed physicians living in South Dakota and 33% of the non-South Dakota group. One-third of the responding physicians from South Dakota classified their spouse as "other professional" meaning a professional person other than medical doctor. This corresponds closely with spouses of the non-South Dakota physicians since 30.4% of them were also professionals.

High School Size

Two other studies[5, 7] have found the size of the physician's graduating class in high school to be an important factor in determining practice location. The current sample had very similar percentage results between the South Dakota physicians and those

out-of-state. Additionally, statistical tests (i.e., Pearson r, t test) did not reveal any significant relationships between physician and/or spouse's high school class size and place of residence, regardless of location.

Father's Occupation

A study dealing with physicians' family background by Bible reported that more than one-third of the physicians, regardless of size of community in which they practiced, saw their fathers as professional men.[4] The fathers of fifteen percent were physicians, as reported by Bible. This study found similar results: Of the South Dakota physicians responding 40.9% listed their fathers as professional men and half of these (20.5%) were physicians; Of the non-South Dakota physicians 51.4% report that their fathers were professional men. Of these 17.5% were physicians.

Of the South Dakota physicians 18.1% were raised with farmer or rancher fathers while 16.1% of the out-of-state physicians shared a similar background.

Mother's Occupation

Approximately two-thirds of the physicians responding listed their mothers as homemakers: 68.2% of the South Dakota physicians and 64.2% of the out-of-state physicians' mothers were homemakers. Only one of the 182 physicians responding reported a physician mother.

State of Residency

The physicians were asked to list the state in which they took their first residency training. The highest percentage, 19.9%, of the University of South Dakota School of Medicine graduates took their first residency in Minnesota. The next largest category, 9.7%, had first residency training in South Dakota, 9.1% of the physicians responding were trained in Texas, 8.5% were trained in California, 4% received training in Colorado and 4% were trained in Iowa.

Of the 44 physicians who were practicing in South Dakota, 23.3% had their residency training in-state. This contrasts significantly with physicians practicing outside of South Dakota, since only 5.1% of them had any residency training in South Dakota. There was a statistically significant difference ($z = 2.68$, $p = .004$) between the two percentage rates. These findings lend credence to the importance of residency programs in the State for retaining USDSM graduates.

Almost one-fourth (23.3%) of physicians practicing in South Dakota took their residency in Minnesota, while 6.9% were trained in Nebraska. Over one half (52.3%) of the 44 physicians who practiced medicine in South Dakota had a residency program in South Dakota, Minnesota or Nebraska. This further indicates the apparent, significant relationship between location of residency and subsequent practice.

Yett and Sloan[11] found a strong correlation between place of residency and place of practice. The data confirmed their conclusion that policies designed to encourage residency training had a higher payoff in terms of physician retention than any other single medical training "event," i.e., medical school or internship.

Size of Community of First Residency

Generally, the South Dakota respondents lived in smaller communities during residency than their peers in other states, since 31.8% of the South Dakota physicians, as compared to 10.9% of the non-South Dakota physicians, were trained in cities of 50,000 to 99,999. However, the largest category from each group did their residencies in cities of over 100,000 people — 63.6% of the South Dakotans and 78.3% of the non-South Dakotans.

Type of Specialty

Much literature is devoted to the hypothesis that practice location and medical specialty are interrelated. Becker, et al.,[7] found that "specialty had the expected influence on choice of practice locations." A greater percentage of primary care physicians chose small towns than did surgical and medical specialists. The Weiskotten study[12] indicated there was an inverse relationship between specialty choice and the size of community chosen for practice, a result generally consistent with the Schwartz and Cantwell findings.[13]

The largest single percentage (23.3%) of the 182 University of South Dakota School of Medicine graduates answering this survey had specialized in family practice. The fields of general internal medicine and general surgery accounted for 18.3% and 12.8%, respectively, of the physicians who responded. Pediatricians accounted for 6.7% of the respondents and 5.0% were orthopedic surgeons.

The information reported by South Dakota physicians on specialties was similar to the overall results. The largest single category of specialist was family practitioners with 29.5%, while 25.0% were general internists, 9.1% pediatricians and 6.8% general surgeons.

The University of South Dakota School of Medicine alumni responding to the questionnaire practiced a total of 44 different specialties. Forty-two (42) of the physicians practiced more than one specialty. These areas of specialization were very di-

verse and included: adolescent medicine, aerospace medicine, anesthesiology, behavioral and developmental pediatrics, cardiac surgery, cardiology, cardiovascular diseases, colon and rectal surgery, critical care, dermatology, emergency medicine, family practice, forensic pathology, gastroenterology, head and neck surgery, hematology, hypertension, infectious diseases, general internal medicine, insurance medicine, neonatology, nephrology, neurological surgery, neurology, nuclear medicine, obstetrics and gynecology, oncology, ophthalmology, orthopedic surgery, otolaryngology, pathology, pediatrics, pediatric hematology/oncology, plastic surgery, general preventive medicine, psychiatry, pulmonary diseases, diagnostic radiology, therapeutic radiology, rheumatology, general surgery, surgical oncology, thoracic surgery, and urology.

Board Certification

A considerable majority (86.4%) of the in-state physicians were board certified in at least one area of specialty. This corresponded very closely with the surveyed group as a whole since 87.4% of the 175 physicians responding to this particular question were board certified.

Hospital Staff Member

All of the South Dakota physicians responding listed themselves as members of a hospital staff. This figure compared favorably with the 95.6% reported by the non-South Dakota group of physicians.

Distance Between Present Location and Hometown

Almost one-third (29.5%) of the responding South Dakota physicians were practicing in their hometown. Additionally, 16.7% of these in-state physicians were practicing in their spouse's hometown.

Contacts with Other Physicians

Of the 182 physicians who responded, 83.0% were in professional contact with other M.D.s several times per day. The figure for South Dakota doctors was almost identical, as 84.1% of those practicing in the state were in contact with other physicians several times daily. An additional 11.4% of the South Dakota physicians consulted with their colleagues "almost daily."

In comparing rural physicians (those practicing in communities of less than 5,000) and nonrural physicians it was found that there was significantly ($t = -3.37$, $p = .001$) more interaction among nonrural physicians with physician peers, as compared to physicians practicing in a rural setting. Fear of professional isolation was often negatively perceived as being associated with rural practice.[3, 14] These findings supported a recent study done by Fuller, et al., on physicians from central South Dakota. They found that "about one-third of the physicians were dissatisfied . . . (with the) inadequate number of peers available for professional interaction."[15]

Time of Decision

The physicians' decisions to locate their practices in a particular type of community (urban, suburban or rural) occurred during the period of internship or residency 61.0% of the time. These findings were consistent with Cooper, et al., who reported that 46.0% of the physicians they studied decided on the type of practice location during the internship or residency phase of their training.[9]

There were some differences in the responses of the South Dakota physicians compared to the non-South Dakota M.D.s regarding time of decision. Looking specifically at the physicians practicing outside of South Dakota, 63.7% decided where to locate during internship or residency whereas 52.3% of the South Dakota doctors made their decision at that time.

Another difference between the two groups was that a larger percentage of South Dakota doctors made a locational decision during medical school compared to their colleagues in other states. Only 8.1% of the non-South Dakotans made a decision of this type while in medical school and 25% of the South Dakota physicians responding said they had already made a locational decision during medical school.

Factors Related to Present Location

Question 25 asked, "How important were/are the following factors in determining your present location?" There were fifteen listed factors. The respondents were asked to rate the importance of each factor on a Sematic Differential Scale with responses ranging from 1 to 7 (i.e., "not important" to "very important"). The results are reported in Tables I and II on the following page.

The tables demonstrate that South Dakota physicians and their colleagues in other states had, on the whole, rated these locational factors similarly. Both groups ranked the Medical Facilities Available as the most important factor in determining their present location. The Opportunities for Professional Growth were ranked as second by the non-South Dakotans and third by the South Dakota physicians surveyed.

One interesting difference between the two groups was that the South Dakota physicians placed a significantly greater importance on Group Practice

TABLE I
SOUTH DAKOTA PHYSICIANS

FACTORS DETERMINING PRESENT LOCATION	N	MEAN	SD
1. Medical Facilities Available	44	5.7	1.4
2. Preference for Group Practice Opportunities	44	*5.4	1.8
3. Opportunities for Professional Growth	44	5.3	1.4
4. Outdoor Recreation Opportunities of the Area	44	5.0	1.5
5. Economy of the Area	44	4.5	1.4
6. Hours of Practice	44	4.2	1.7
7. Type of Specialty Training	43	4.0	2.3
8. Cultural Opportunities of the Area	44	*3.9	1.7
9. Type of Residency Training	43	3.9	2.2
10. Closeness to Your Hometown	44	*3.8	1.9
11. Opportunities for Spouse's Professional Growth	41	3.5	1.9
12. Medical Education (CME) Opportunities	44	3.3	1.5
13. Closeness to your Spouse's Hometown	42	*3.2	1.9
14. Location of Other Residency (if applicable)	31	2.6	2.0
15. Location of First Residency Training	44	2.5	1.9

TABLE II
NON-SOUTH DAKOTA PHYSICIANS

FACTORS DETERMINING PRESENT LOCATION	N	MEAN	SD
1. Medical Facilities Available	137	5.9	1.3
2. Opportunities for Professional Growth	138	5.4	1.4
3. Outdoor Recreation Opportunities for the Area	138	4.8	1.8
4. Economy of the Area	138	4.6	1.7
5. Cultural Opportunities of the Area	138	*4.5	1.8
6. Preference for Group Practice Opportunities	136	*4.4	2.2
7. Type of Specialty Training	131	4.3	2.3
8. Hours of Practice	136	4.0	2.1
9. Type of Residency Training	131	3.8	2.3
10. Medical Education (CME) Opportunities	136	3.8	2.0
11. Opportunities for Spouse's Professional Growth	120	3.7	2.1
12. Location of First Residency Training	137	3.0	2.1
13. Location of Other Residency (if applicable)	94	2.9	2.1
14. Closeness to your Spouse's Hometown	123	*2.3	1.7
15. Closeness to Your Hometown	138	*2.2	1.7

* Statistically significant at .05 level or less
N = Number
SD = Standard Deviation

Opportunities than did the non-South Dakota physicians. Physicians practicing in South Dakota ranked Group Practice Opportunities as the second most important factor in determining their present location with a mean of 5.386. The responding physicians who were practicing outside South Dakota placed Group Practice Opportunities in the sixth position with a mean of 4.360. These means have a difference of statistical significance ($t = -2.79$, $p = .006$).

The importance placed on this Group Practice factor by the South Dakota physicians has been supported in several studies.[4, 9, 16-18] Cooper, et al.,[9] found that the opportunity to join a desirable partnership or group practice was the factor most often cited by the physicians in their study sample as being most important in their location decision. The Steinwald report stated:

> The overwhelming majority of new physicians now prefer group practice; and, what is perhaps more surprising is that three out of four established physicians, if they had to do it over again, would also choose group practice over solo practice.[17]

Another significant difference between the two groups was that, predictably, the South Dakota physicians felt that Closeness to (their) Hometown and Spouse's Hometown were of greater consequence in the decision process than they were for out-of-state doctors. South Dakota M.D.s felt it was the tenth most important factor in determining their location with a mean of 3.750. The non-South Dakota physicians gave the Closeness to Your Hometown factor the lowest rating — 15th out of 15 — and a mean of 2.203 ($t = -5.16$, $p = .0001$). Also, there was a significant difference ($t = -2.96$, $p = .0035$) in mean values of South Dakota physicians and the others on the importance of distance from spouse's hometown. In-state physicians rated this factor significantly higher (mean = 3.19) than did out-of-state physicians (mean = 2.25), although neither group felt it was an important factor in comparison to many of the other considerations.

The final factor which was found to be significant in differentiating in-state from out-of-state physicians, all of whom graduated from USD as two year medical students, was Cultural Opportunities of the Area. Nonresident physicians rated this factor as being significantly more important in determining present location than did resident doctors ($t = 1.99$, $p = .049$). It is reasonable to assume that physicians who located in more populated areas would be more inclined to do so because of the availability of cultural amenities.

Satisfaction with Community and Practice

The final three questions in the survey instrument also used a Sematic Differential Scale of 1 to 7, with 1 being "not satisfied" and 7 being "very satisfied." The questions dealt with the level of the

TABLE III
SATISFACTION SCORES

Satisfaction Questions	South Dakota Number	Mean	SD	Non-South Dakota Number	Mean	SD
Satisfaction with Community	44	5.91	1.14	138	5.90	1.31
Spouse's Satisfaction with Community	42	5.71	1.35	116	5.59	1.50
Satisfaction with Practice	44	6.02	1.09	138	5.88	1.15

SD = Standard Deviations

physicians' satisfaction with the community in which they live, their spouses' satisfaction with this community, and finally, the physicians' level of satisfaction with their practices.

Overall, both groups of physicians ranked these three factors very highly. The South Dakota physicians appeared to be slightly more satisfied with these satisfaction indices than did their out-of-state peers, although the differences were not statistically significant. These findings were consistent with the study of Fuller, et al., which found "highly favorable perceptions existed among (those central South Dakota physicians surveyed) . . . regarding . . . community and family's satisfaction with the community."[15]

CONCLUSIONS/DISCUSSION

In examining the differences, similarities, and other attributes of the physicians who graduated from a two year medical program at the University of South Dakota, it appeared that there are some significant differences between physicians who locate in South Dakota and those who reside elsewhere. Physicians who selected South Dakota as the place to establish their medical practices tended to be raised in smaller, less populated communities, as were their spouses. These findings were consistent with other studies which had found that the size of the community in which a physician was raised[3-8] and the size of the spouse's community[6, 9, 10] were related to subsequent practice location.

There was a significant relationship between location of residency program and location of practice. Those who selected South Dakota as a practice location were much more likely to have had residency training in South Dakota or a nearby state. In fact, most (52%) received residency training in South Dakota or a contiguous state. Yett and Sloan[11] also found a relationship between residency and subsequent practice location. It appeared that the current residency programs in South Dakota do provide an impetus for attracting and retaining physicians for the State.

Overall the type of specialty (i.e., family practice, surgery, internal medicine, etc.) was not significantly related to place of residence (South Dakota/non-South Dakota), although those living in-state were more likely to be in family practice or internal medicine than were out-of-state physicians (chi square = 3.974, p. = .046).

In summary, based on data collected for this study, physicians who chose to locate in South Dakota tended to be from rural areas, married spouses who were from relatively small communities, took residency training in or near South Dakota, specialized in family practice or internal medicine, made their decision as to where to locate early in their medical training, located near their hometown and/or their spouse's hometown, were interested in group practice and were not overly concerned with the cultural opportunities of the area of residence.

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Advances in Antiviral Therapy of Herpesvirus Infections in Immunocompromised Hosts, Radisson Univ. Hotel, Minneapolis, MN, May 3. Fee: $75. 6½ hrs. AMA Category I credits. Contact: Audrey Chan, CME, U. of Minn., Box 293 Mayo Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Heart Attack Prevention, Wilder Forest, Marine on St. Croix, MN, May 19-20. CME credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Gynecologic Oncology, Radisson Univ. Hotel, Minneapolis, MN, May 21. AMA Category 1 credits available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Advanced Cardiac Life Support, Univ. of Kans. Med. Ctr., Kansas City, KS, May 21-22. Fee: $150. 13.5 hrs. AAFP & AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

University Association for Emergency Medicine's 15th Annual Meeting, Radisson Muehlbach Hotel, Kansas City, MO, May 21-23. Fee: $250. Contact: Mary Ann Schropp, Exec. Dir., UA/EM, 900 W. Ottawa, Lansing, MI 48915. Phone: (517) 485-5484.

June

Topics and Advances in Pediatrics, Radisson Univ. Hotel, Minneapolis, MN, June 5-7. Fee: $225. 18.5 hrs. AAFP & AMA Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455. Phone: (612) 373-8012.

Clinical Hypnosis, Earle Brown Ctr., U. of Minn., St. Paul, MN, June 7-8. AMA Category I credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Surgery for Primary Care, Madden's, Brainerd, MN, June 8-9. AMA Category 1 credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Common Problems and Difficult Decisions in Hand Surgery, Niagra Falls, NY, June 19-22. Fee: $425. 22 hrs. AMA Category 1 credits. Contact: Am. Society for Surgery of the Hand, 3025 S. Parker Rd., Ste. 65. Aurora, CO 80014. Phone: (303) 755-4588.

Neonatal and Pediatric Respiratory Disease Conference, Sheraton-Sand Key Resort Hotel, Clearwater Beach, FL, June 6-9. Fee: $195. 16 hrs. Category 1 credits. Contact: Myrtle E. Larson, RN, BSN, Gulf Coast Lung Assoc., 6160 Central Ave., St. Petersburg, FL 33707. Phone: (813) 347-6133.

Behavioral Pediatrics, Earle Brown Ctr., U. of Minn., St. Paul, MN, June 20-22. AMA Category 1 credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Teton's General Pediatric Conference, Jackson Hole Racquet Club, Jackson, WY, June 30-July 5. Fee: $275. 20 hrs. AMA Category 1 & AAFP credits. Contact: Marjorie Adey, Coord., CME, U. of Neb. Med. Ctr., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402) 559-4152.

July

Teton's Sports Medicine Conference, Jackson Hole Racquet Club, Jackson, WY, July 7-11. Fee: $275. 16 hrs. AMA Category I & AAFP credits. Contact: Marjorie Adey, Coord, CME, U. of Neb. Med. Ctr., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402) 559-4152.

Spine Problems: Controversies and Updates, Hyatt Regency, Minneapolis, MN, July 10-13. Fee: $350. 24½ hrs. AMA Category 1 credits. Contact: CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

42nd Annual Meeting of the American Geriatrics Society — 6th Annual Meeting of the American Federation for Aging Research, Sheraton Centre, New York, NY, July 11-12. Contact: Am. Geriatrics Society, 10 Columbus Circle, Ste. 1470, New York, NY 10019. Phone: (212) 582-1333.

Human Aging, Willey Hall, U. of Minn., Minneapolis, MN, July 17-18. AMA Category I credit hrs. available. Contact: CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

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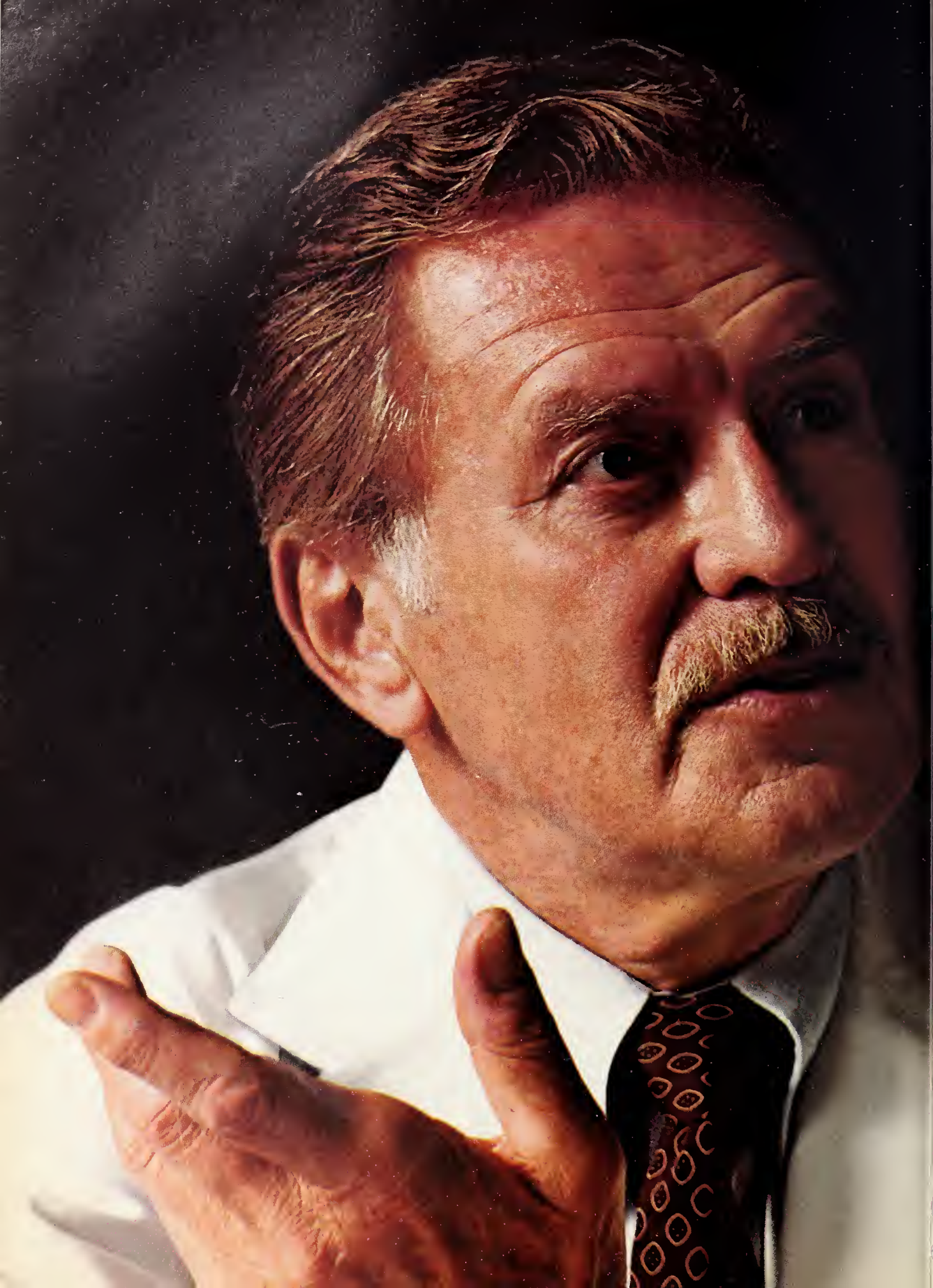

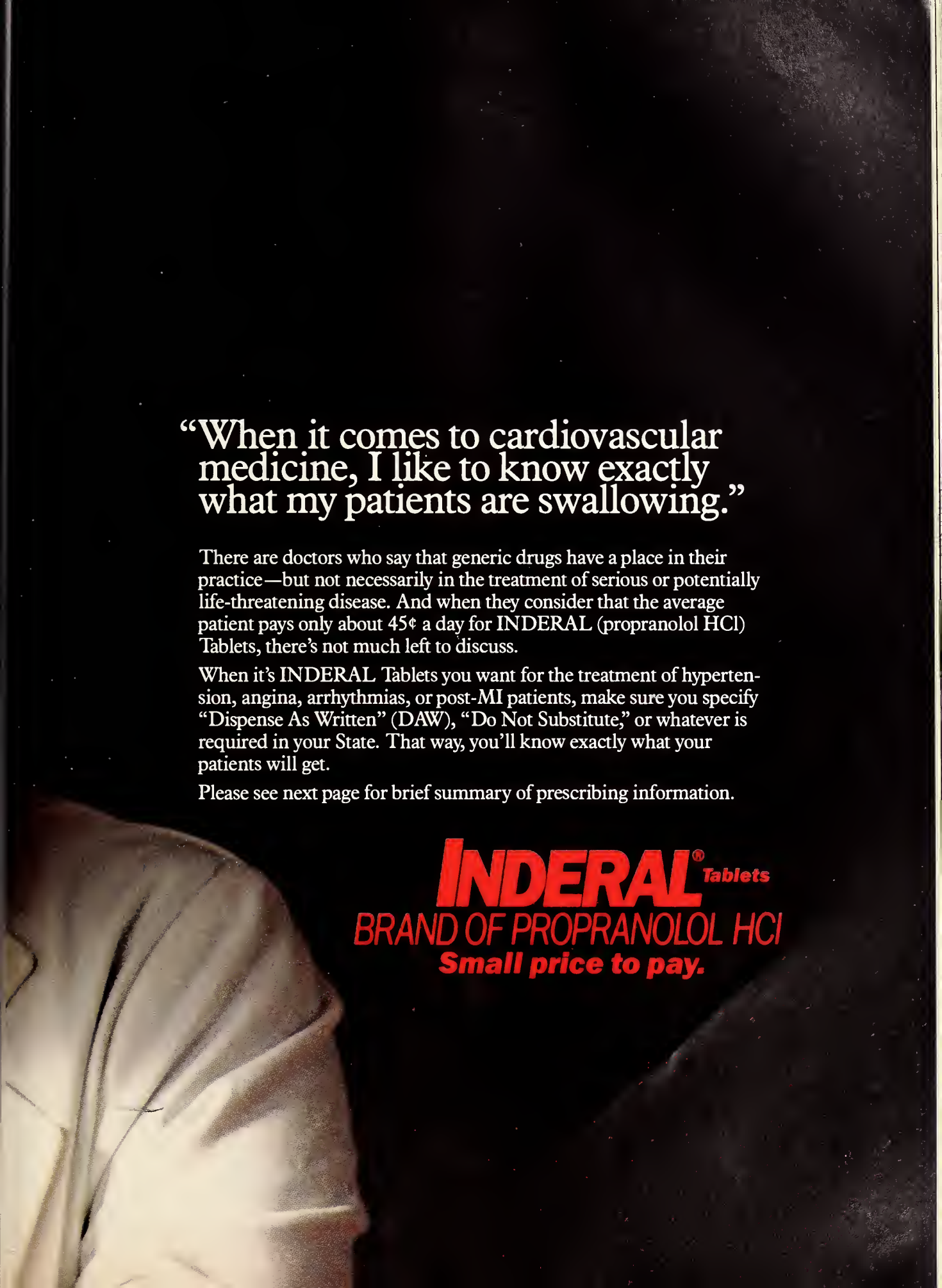
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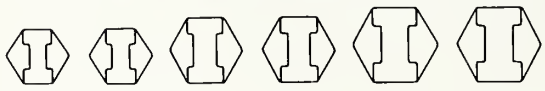

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Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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Comminuted Fractures of the Proximal Surface of the Tibia

Robert E. Van Demark, M.D., M.S. (Ortho. Surg.)*

ABSTRACT

Displaced comminuted fractures of the articular surface of the tibia result in loss of blood supply (particularly of the central loose bony fragments), as well as incongruity of the articular surface. Failure to restore a smooth articular surface, and to protect the revascularizing bony fragments dooms the patient to severe traumatic arthritis. Closed and open methods of treatment each have certain advantages. The open method (which may further reduce the blood supply) affords the opportunity to primarily treat the associated soft tissue problems, particularly of the menisci and ligaments. The unusual complication of complete arterial occlusion (demonstrated by arteriogram) due to compartment syndrome, is reported.

Undisplaced fractures of the proximal tibia present no particular problem and respond well to non-weight bearing treatment with active exercise. In contrast, comminuted displaced injuries of the proximal tibia may be devastating.

In 1935 Webb,[5] a chief railway surgeon in the Twin Cities, reported his experience with these displaced fractures in trainmen. This etiology has largely disappeared, although falls from a height may be followed by this type of fracture. Traffic accidents involving passengers and pedestrians are the most common cause of tibial plateau fractures. Sports injuries are a minor cause of this fracture.

The normal valgus position of the knee joint, the shape of the hard lateral femoral condyle, and the weaker bone trabeculations of the lateral tibial condyle all are factors in the increased incidence of the lateral femoral condyle involvement. There is a combination of axial forces and lateral stress. Because of the many variables, and the magnitude and direction of the precipitating forces, no classification of proximal articular tibial fractures can encompass all the enormous varieties seen in clinical practice. Associated injuries are to the menisci, cruciate and the collateral ligaments and uncommonly the nerves. The blood vessels of the popliteal fossa may be involved and should be checked in every instance. The injury to the menisci and the anterior cruciate ligament are the most frequent in our experience.

Clinical examination reveals marked swelling, tenderness and deformity in those cases with displacement. Motion in the knee is not tolerated, because of the severe pain; stress tests of the collateral ligament should be avoided when the patient is awake.

Roentgenographic examination, including the AP, lateral and oblique views (Fig. 1), will reveal the extent of the bony injury in most cases but does not demonstrate the soft tissue injuries, particularly the injuries to the menisci which are so frequently associated.

The goal of treatment should be the smooth and stable reconstruction of the joint surface, with prevention or delay of subsequent traumatic arthritis. In those fractures with displacement, operative treatment appears to offer better results than closed methods, particularly for those surgeons who are unacquainted with the closed methods of treatment as propounded by Webb.[5]

Closed reduction is effected on the fracture table by longitudinal and lateral compression forces followed by insertion of compression bolts, washers and nuts through small incisions (Fig. 2 & 3). Because of the lateral compression required to maintain a closed reduction, compartmental pressure is increased in these cases and before application of a cast a prophylactic fasciotomy of the anterior com-

* Clinical Professor Orthopaedic Surgery, USD Medical School, Sioux Falls, SD.

Figure 1
This 67 year old female fell from a bicycle on July 30, 1984, suffering severe comminution of the articular surface of the tibia.

Figure 2
Closed reduction with Webb bolting, A.P. view.

Figure 3
Lateral view of knee — post-reduction. Bolts, washers and nuts removed 4 months P.O. Five months postoperatively she had an excellent range of painless, stable motion and lacked only 10 degrees of complete flexion (compared to the opposite knee).

partment of the leg is desirable in most instances. Immobilization in a cast must be continued for a minimum of 6 to 8 weeks followed by carefully supervised, active physical therapy program. Full weight bearing is not resumed until 3 to 5 months after the fracture. The bolts, washers and nuts are removed after bony union has occurred. Any significant varus or valgus deformity is corrected by late high tibial osteotomy.

Open reduction[3, 4] affords not only an anatomical repair of the bony injury (Fig. 4 & 5), but also repair of the associated soft tissue injuries. Where there is an associated compartmental occlusion of the vessels in the lower extremity multiple fasciotomies can be carried out at the same time (Fig. 6). It has been our practice the past several years to repair all peripheral tears and maintain the menisci as far as possible. Usually a bone graft is used to fill in any subarticular defect caused by compression (Fig. 7 & 8). The postoperative care is the same for a closed reduction.

With displaced fractures, the prognosis is guarded despite the good reduction, because of the avascularity of the fragments. It is for this reason that early weight bearing must be avoided, to permit good revascularization and good bony union. We feel retaining the menisci is of considerable value in

Figure 4
This 54 year old female fell from a stepladder in her home on September 19, 1984. Note the displaced articular fragment between the pieces of the lateral condyle.

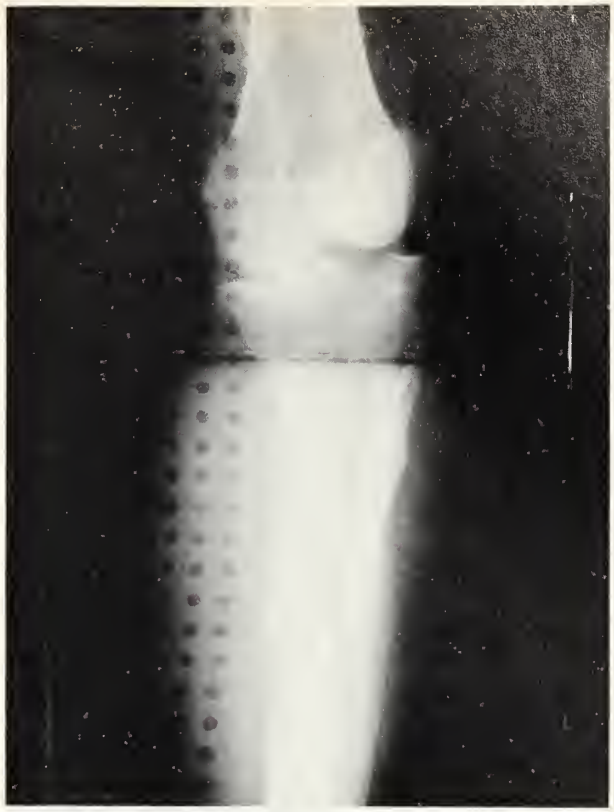

Figure 6
Arteriogram showed the popliteal vessels intact but the leg vessels showed no patency in the lower leg, diagnostic of a compartmental syndrome. Pulses absent at the ankle.

Figure 5
On the lateral view the displaced articular fragment is angulated downward 70 degrees.

Figure 7
A.P. view following open reduction. A peripheral repair of the laterally displaced meniscus was performed. Pulses returned at ankle following concomitant fasciotomies.

Figure 8
Lateral view following restoration of articular surface and bone grafting of compression cavity. Four months postoperatively she had 130 degrees of painless, stable motion.

cushioning the effect of weight bearing between the two articular surfaces.[1]

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President's Page

1985 marks the 75th Anniversary of the SDSMA Auxiliary, the oldest continuous auxiliary in the nation. Governor Janklow has proclaimed 1985 as the year to pay tribute to our auxiliary. The many projects of the past year have added to the accomplishments of the auxiliary. On behalf of the SDSMA, I salute you all and wish you the best. We look forward to the culmination of your years activities at the June meeting in Sioux Falls.

This issue of the *Journal* is my last message for the President's Page. I would like to thank all members of the commissions and committees for their deliberations, actions and help to the Council and Executive Committee. Our state office, with the many "hats" has continued to perform in all phases with exemplary direction and support. Please welcome Dick Gere and your new officers with a continued enthusiasm and support for the coming year. The annual meeting in Sioux Falls shapes up to be an excellent clinical session and one I am sure you will enjoy.

See you June 6-9.

Howard L. Saylor, Jr., M.D., President
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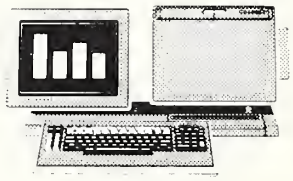

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Two Cases of Atypical Digital Vasospasm

L. M. Gutnik, M.D.*
J. W. Freeman, M.D.†
Anita Janavs‡

RAYNAUD'S SYNDROME is a term used to describe episodic digital ischemia, generally precipitated by cold or emotional factors. It is estimated that approximately 50% of persons with Raynaud's syndrome have some associated systemic disease, and a large number of such conditions have been identified. The diagnosis of an underlying systemic disease can be made more difficult by the fact that Raynaud's Syndrome may precede other manifestations of systemic illness by many years.[1]

Despite this high association with systemic disease, many persons with Raynaud's syndrome seem to have this as an isolated finding. In the past, persons in this category were labeled as having "Raynaud's disease" to distinguish idiopathic vasospasm from the type of vasospasm related to a specific identifiable cause ("Raynaud's phenomenon" in older terminology). Analysis of persons with idiopathic Raynaud's disease shows a striking preponderance for young women. Estimates suggest that this process affects women in 60 to 90% of cases, and frequently the disease begins in the first and second decades of life in these individuals.[2]

The following two cases illustrate that idiopathic episodic vasospastic disease can occur in males, and in elderly as well as young persons.

CASE 1

R.W. is a 26 year old white male, a railroad employee, who presented with progressive pain and blue discoloration of the right index digit of three months' duration. His employment history was significant in that his occupation involved daily trauma to his hand. He is not a smoker and denies any drug use. Initially he was treated with nifedipine and nitro paste. Despite this, ischemic changes progressed to involve the thumb, third and fourth digits of the right hand. These digits were cool and cyanotic, and blanching of the right index finger tip was noted, as was cold sensitivity. His physical examination was otherwise normal. Specifically, no abnormalities were found on thoracic outlet, compression maneuvers such as Adson's or hyperabduction. Laboratory studies included a negative screen for vasculitis and normal blood chemistries. Angiography of the right upper arm showed no structural abnormalities; however, the ulnar artery was small and tortuous at the level of the proximal metacarpals. The digital arteries were not visualized even after an 84 second delayed film and an intra-arterial reserpine injection. A stellate ganglion block was beneficial and resulted in significant improvement, from pretreatment levels, in temperatures and pressures. The patient was started on Dibenzyline, and has subsequently done well.

CASE 2

C.C. is a 72 year old white male who, for two months, had noted pain and bluish discoloration of his right index finger with exposure to cold. He was employed as a manual laborer. He had ceased smoking 15 years previously and was on no medications. On examination he had a decreased temperature in the right index finger, slight cyanosis and also splinter hemorrhages of that nailbed. A heart murmur of mitral regurgitation was noted. Laboratory tests included negative blood cultures, negative screen for vasculitis. A cardiac sector scan revealed a calcified mitral annulus. Thoracic outlet maneuvers were unremarkable. Digit plethysmography gave abnormal pulse wave forms, and cool water immersion testing was compatible with vasospasm. A thoracic aorta angiogram revealed a marked tortuosity of the right innominate artery with slight aneurysm formation, but no evidence of stenosis or atheromatous change was apparent. The right arm arteries were visualized distally to the arcade arteries, but the digital arteries did not opacify. The patient was started on aspirin, Persantine and Dibenzyline, and subsequently has done well.

CONCLUSION

While idiopathic Raynaud's phenomenon clearly

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does occur most frequently in young females, the process is not limited to such individuals. These two cases illustrate that Raynaud's also occurs in males, of widely varying ages. Both trauma and manual labor seem to predispose to Raynaud's phenomenon, and these two cases are reflective of this observation. Certainly any person who presents with Raynaud's phenomenon, regardless of the age or sex, deserves a thorough evaluation for an underlying systemic disease. The differential diagnosis must include a variety of connective tissue disorders, as well as drug-induced Raynaud's. In the older patient it is particularly important to consider and exclude structural disease.

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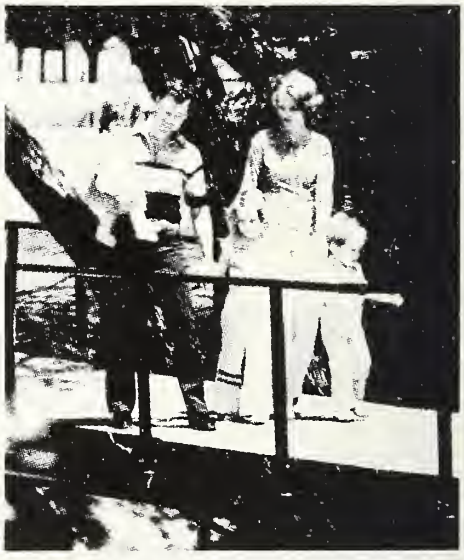

THE AIR FORCE HEALTH CARE TEAM

SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105

PROPOSED SDAFP BYLAWS CHANGES, ADDITIONS, DELETIONS
(To be voted on at Annual Business Meeting, August 9, 1985)

CHAPTER V

Dues and Admission Fees

SECTION 1. Dues for active members shall be **DELETE twenty-five dollars ($25.00), ADD fifty dollars ($50.00)** per year, due and payable upon election to membership and payable in advance on the first day of each subsequent year so long as the member shall remain a member.

Rationale:

1. There has been only one dues increase, that from $10 to $25, since the founding of SDAFP in 1951, that occurring over 15 years ago.
2. Registration fees for Black Hills Seminars have remained low (less then $10 per credit hour of CME).
3. Chapter expenses have increased, especially for supplies, increased member involvement and travel.
4. Dues increase would become effective with 1986 dues billing.

CHAPTER XII

Miscellaneous

SECTION 5. The organization shall pay round trip coach airfare and advertised registration fees to each of the chapter officers and delegates attending the annual State Officers Conference of the AAFP, **ADD and to each of the resident board members attending the Annual National Conference of Family Practice Residents of the AAFP.**

Rationale:

1. Resident board members will receive the same support as other officers.

NEW — ADD

SECTION 10. **All active and affiliate members shall be required to attend at least one SDAFP constituent chapter produced scientific program each three year re-election cycle, this meeting to offer a minimum of 12 prescribed hours of AAFP continuing medical education credit. This requirement to commence with the three year re-election cycle which begins January 1 of the year following passage of this bylaw.**

Rationale:

1. Encourages more involvement by all members in chapter meetings and affairs.
2. Insures that affiliate members attend chapter activities early in their membership.
3. Requires attendance at at least one Black Hills Seminar each three years.
4. Offers member support to SDAFP produced scientific meetings.
5. No more than 40% of current members attend a Black Hills Seminar, most of these being repeat attenders yearly.

SDAFP CANDIDATES FOR OFFICE

Joel B. Huber, M.D., Redfield is the SDAFP nominating committee choice for Vice-President at large, the election to be held at the annual business meeting during the 1985 Black Hills Summer Seminar in Rapid City August 9.

Dr. Huber is a native of Pierre. He received his pre-medical and basic science medical education at the University of South Dakota and received his M.D. degree from the University of Oklahoma in 1977. Joel completed a Family Practice Residency at the Grant Hospital Program in Columbus, Ohio in July of 1980. Since that time he has been associated with Family Physicians-Surgeons, P.D. in Redfield, and has served as Chief of Staff of the Community Memorial Hospital in Redfield.

Dr. Huber, married to Donna, is a Diplomate of the American Board of Family Practice. He has been a member of the South Dakota Academy of Family Physicians and the Aberdeen District Medical Society since 1980.

Nominations for the new resident position on the Board of Directors include current Sioux Falls Family Practice residents **Dave Laposky, M.D.** and **Mary Beecher, M.D.** One of these nominees will be elected by the membership at the annual meeting to serve for two years on the Board of Directors, the first year without vote. One year later another second year resident member will be elected to fill the second resident position on the Board of Directors. Dr. Laposky graduated from Sioux Valley High School in Volga and attended South Dakota State University. He is a graduate of the University of South Dakota School of Medicine and will finish his first year in the Sioux Falls program July 1, 1985. Dave and his wife Bev have three children. He was involved with the Christian Medical Society in medical school and now serves on the Elder Board of his church and directs music for the primary department. Dr. Beecher grew up in a small town in northwest Iowa and attended high school in Hudson, South Dakota. She graduated from Augustana College in Sioux Falls and is also a graduate of the University of South Dakota School of Medicine. She also will become a second year family practice resident July 1, 1985.

Other nominations for office include **Richard Finley, M.D.** of Rapid City for President-Elect and **Loren H. Amundson, M.D.** of Sioux Falls for Secretary-Treasurer. President-Elect **Michael Brown, M.D.** of Spearfish will be installed as 1985-86 president at the annual meeting. **Charles L. Swanson, M.D.** of Pierre becomes past president. Vice-Presidents continuing their service include **Richard Honke II, M.D.** of Wagner and **Richard McClaflin, M.D.** of Watertown.

Candidates for another two year term as delegate and alternate delegate are **Bruce C. Lushbough, M.D.** of Brookings as delegate and **Herbert Saloum, M.D.** of Tyndall as alternate delegate.

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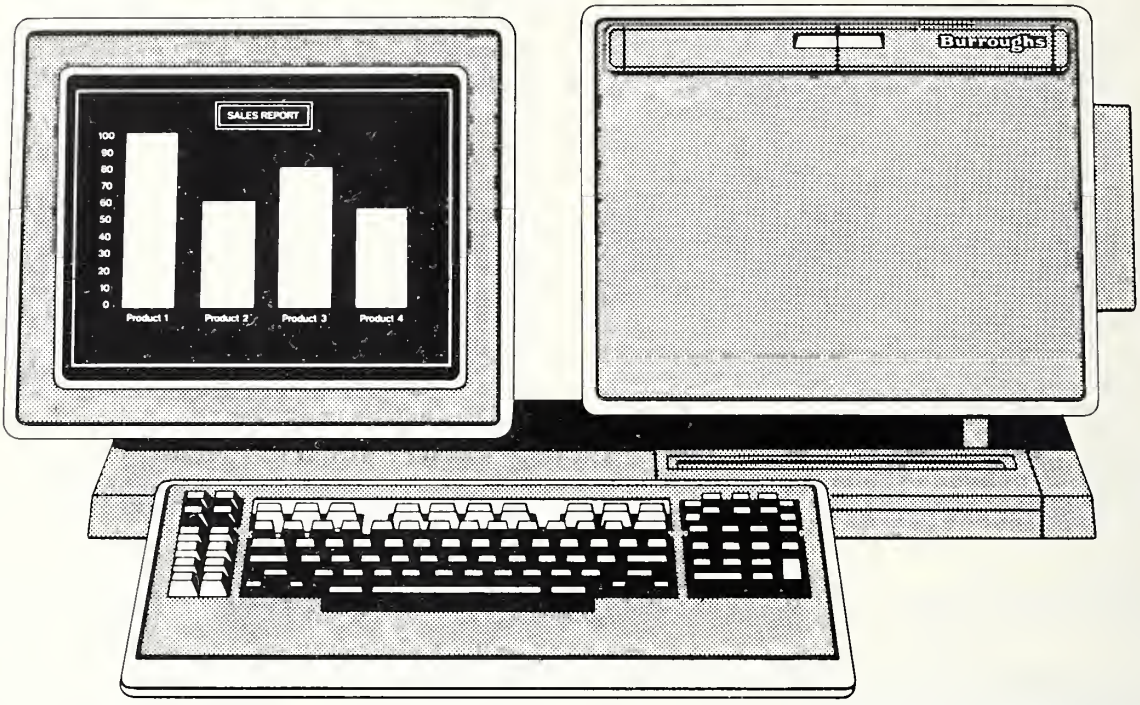

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Ruminations upon Cerumen: Dry vs Wet; Indian vs Caucasian

John B. Gregg, M.D.*

ABSTRACT

Cerumen is regarded as aesthetically undesirable by many in our society. By others — particularly farmers or industrial workers, wax in the ear canal is considered a source of reduced hearing acuity. Clinical observations and study by the author during his Otolaryngology practice in South Dakota suggest that these perceptions may not be valid.

Individuals complaining of hearing loss attributed to wax obstructing the canal had screening audiograms before and after treatment. Only rarely was there significant objective change in auditory acuity demonstrable.

Observation and analysis of cerumen from Native American suggest a genetic correlation with type (wet vs. dry) of cerumen. Others have made similar observations, and have postulated an adaptic process whereby "dry" wax is most protective in dry or cold climates, but "wet" wax is beneficial in more humid, warmer climates.

INTRODUCTION

Wax exuding from the ear canal is by many, considered "dirty, unclean, unhygenic, unsanitary, the mark of a mother not caring for her children." The canals must be cleaned thoroughly and frequently to be socially acceptable. Often when dealing with children, or parents, this or a similar mind set is encountered. Is it possible that these widely held concepts may be out of phase with reality? May perchance harm be done by frequent, diligent ear cleaning? Some answers to these and other questions relating to the external auditory canal constitute the subject of this paper.

Skin appendage glands in the external auditory canal produce a substance, cerumen, that varies in amount and consistency throughout life. In young white or black children, cerumen is usually oily in consistency, and pale yellow or brown in color. Later in life, cerumen may appear as a firm, brown mass of material in the outer ear canal; lodged against the tympanic membrane it may keep sound from entering, and may manifest as a conductive type hearing loss.

Often heard in the physician's office is the comment, "Doc, I can't hear very well. Can you clean the wax out of my ears?" Usually this comment comes from a man, often a farmer or someone exposed to occupational noise. Often there is a more serious underlying problem, sensori-neural hearing loss due to acoustic trauma. In this circumstance, external auditory canal obstruction is only a minuscule part of the problem.

After the ears have been cleaned, the affected individual leaves; satisfied that the ears were treated and his hearing improved. Usually no quantitative assessment of hearing function has been done, before or after cleaning the ears. Was the treatment really beneficial? Not infrequently an episode of acute external otitis follows in an ear canal recently treated for cerumen.

During summer, acute external otitis (swimmer's ear) is a frequent problem. The physician who treats ear problems can readily tell when the swimming pools open or close, by a look at his office appointment calendar.

Acute external otitis may be engendered by vigorous or indiscriminate use of "Q" tips, bobby pins, fingernail files, toothpicks, and other objects introduced into the external auditory canal.

Frequently during healing after an episode of acute otitis externa, the skin of the outer ear canal becomes very thin, atropic, and parchment-like. It loses the normal skin appendage glands. As a result

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the canal is dry and devoid of cerumen. The affected individual is annoyed by persistent itching. This leads to habitual "cleaning" of the ear canal with various implements, or irrigation, despite the absence of cerumen. When water enters an ear canal with atropic skin, the quiescent process may be reactivated into acute external otitis. When the skin of the canal is atrophic the physician must convince the individual of the chronicity of the process, and the need to keep the ear dry, and to let the ear canal alone.

The exact function of cerumen has long been a matter of conjecture. The physiology and pathology of the external auditory canal has been investigated extensively. The late Benjamin Senturia, M.D., explored the chemistry of cerumen and factors important to the homeostasis of the normal ear canal.[1] Senturia was quoted by Petrakis,[2] "Cerumen is reported to lack bactericidal, fungicidal, and insect-repellant qualities, and there is no clinical evidence to suggest that type of earwax (dry) plays a part in any disease of the ear or any other organ." This opinion notwithstanding, the findings by and subsequent counsel from Senturia influenced our investigation relating to cerumen in South Dakota populations.

CLINICAL OBSERVATIONS

Experiences during Otolaryngology practice in South Dakota, including consultation clinics at several Indian reservations, led to four observations in relation to the human outer ear canal;

1. In the external auditory canal of most Caucasians and Blacks cerumen is oily or paste-like in consistency. In Native Americans the canal contents frequently are dry and flaky.
2. The consistency of cerumen in Native Americans seemed to correlate with the degree of full-bloodedness; the less the genetic contamination, the greater the likelihood of dry, flaky cerumen.
3. Repeated observation of the same individual occasionally revealed change in the type of the cerumen.
4. The seasonal external otitis (swimmer's ear), which is common in the general population of South Dakota, was seen infrequently in Native American children. This despite the fact that many of these children swam in dirty stock ponds, creeks or other contaminated water.

To seek answers to questions posed by these observations, three studies were done:

1. Over a 15 year interval, all individuals who complained of hearing loss, obstructed ear canals, tinnitus, or vertigo, received screening air conduction audiometric testing (256-6000 Hz at 20 db) before and after any treatment. If the response in the 512-4000 Hz range exceeded 20 db, pure tone audiograms were done.
2. Over a 2 year period, a file was compiled regarding cerumen observed during clinics at South Dakota reservations along with pertinent provenance.
3. Cerumen samples from Native Americans were collected at clinics, at schools, and in the office; these were submitted for analysis at the National Institutes of Health, as part of an ongoing project relating to cerumen.

RESULTS

1. Whenever cerumen appeared to obstruct an external auditory canal, hearing was screened before and after cleaning the canal. The audiograms were used to assay hearing acuity and to demonstrate to the patient any effect produced by the presence of cerumen. Only infrequently was the hearing influenced significantly by external auditory canal cerumen; i.e., 5 db, or at most 10 db improvement. Despite lack of audiometric improvement, the patient often was *subjectively* improved after treatment. The pre and post treatment audiograms often showed underlying sensori-neural type hearing loss and were used to demonstrate the problem to the patient.
2. Data was compiled for all individuals purporting to have Native American blood as to cultural affiliation, sex, degree of Indian blood, and the clinical appearance of cerumen. The assessment of cerumen was performed by the same examiner throughout the study period.

Observations made during this study are shown in Table I. The outer ear canals were examined in 499 Native Americans (257 men, 242 women); 43 (8%) on more than one occasion. Forty-five percent had dry cerumen, 48.1% had wet cerumen, and 6.2% had none. For individuals seen on more than one occasion, the cerumen type appeared different in only one percent. The degree of Indian blood was reported as greater than 75% in 104 males and 86 females. Of these men 65 (62.5%) had dry cerumen, while 49 (56.9%) of the women had dry cerumen. In individuals whose Indian blood was 25% or less, or unknown (males = 18, females = 26) cerumen was dry in 11 and wet in 33 individuals (25% dry; 75% wet).

3. Cerumen was collected from 52 Native Americans and specimens, with provenance giving cerumen type (wet/dry), sex, tribal affiliation, and degree of blood, were sent to the Human Genetics Branch, National Institute of Dental Research, for analysis.[3] Specimens were analyzed for high carbon free fatty acids, squaline,

TABLE I
SOUTH DAKOTA NATIVE AMERICAN CERUMEN

CULTURAL AFFILIATION AND DEGREE OF BLOOD			DRY	OILY	NONE	SEEN ON 2 OR MORE OCCASIONS
Apache	Male	4/4	1			
Arapahoe	Male	4/4	1			
Arikara	Male	???		1		
Blackfoot	Female	1/2	1			
Chippewa	Female	4/4		1		
	Male	???	1			
	Male	1/2		1		
Crow	Male	4/4	1			
	Female	1/8		1		
Gros ventre	Female	4/4	1			
Pawnee	Male	1/2	1			
Winnebago	Female	4/4	1			
	Female	3/4		1		
Sioux	Male	0-25%	5	11		2
	Male	26-50%	7	18		1
	Male	51-75%	19	19	5	6
	Male	76-100%	65	33	6	12(1)
	Male	???	24	34	4	3(3)
	Female	0-25%	5	20		1
	Female	25-50%	15	23	1	5(1)
	Female	51-75%	15	22	3	5
	Female	76-100%	49	28	9	6(1)
	Female	???	16	27	3	2
Totals			228	240	31	43(6)

Numbers enclosed in brackets ( ) indicate individuals examined on two or more occasions, and the cerumen type was reported differently. The cerumen type reported previously was not known to the examiner. Otherwise, repeated examinations showed the same type cerumen.

cholesterol/cholesterol esters, and high molecular weight alcohols from ester saponification.

The analysis was reported, "from the appearance of the gas chromatographs, the dry wax has a greater proportion of high molecular weight alcohols from ester saponification."[4]

Similar observations have been made by others. Petrikis noted a wet/dry cerumen dichotomy between the general population and other Native Americans, Eskimos, and Orientals. He raised the question whether this constituted a prevalent genetic trait among Native Americans.[7] It was postulated that cerumen characteristics are inherited as simple Mendelian traits, the dry being recessive to the wet allele. The wet allele predominates in Negros and Caucasians, while in American Indians the dry appears with greater frequency. No reason is known for the genetic dimorphism. Petrakis postulated some adaptive value, possibly related to disease resistance.[2]

Petrakis' group reported: "When grouped according to the racial background of the subjects, results indicate that although lysozyme was present in most subjects with the dry type ear wax, there were distinct differences in the frequency of the enzyme positive reaction in wet cerumen among the racial groups." (Table II) "These were: Negro 44.1% positive, Caucasian 32.5% positive, and Chinese 18.6% positive. These differences were statistically significant ($P < 0.01$, 2 D.F.). In a subsample of 74 wet and 10 dry specimens, immunoprecipitin revealed IgG antibody in all ten dry cerumens, and both IgG and IgA antibody in one wet type. Attempts to demonstrate the presence of inhibitors of lysozyme activity in cerumen samples absent in enzyme activity with this assay were negative."

Lysozyme and immunoglobulins are present in nasal secretions, tears, saliva, and are important in resistance to infections. Petrakis' research included evaluation of cerumen samples from South Dakota.[8]

TABLE II
CERUMEN LYSOZYME: WET/DRY: CAUCASIAN, CHINESE, NEGRO

Groups	CERUMEN TYPE		LYSOZYME PRESENT No.	(%)
Caucasians	Wet	(363)	118	32.5
	Dry	(5)	5	100.0
Chinese	Wet	(70)	13	18.6
	Dry	(99)	83	83.8
Negroes	Wet	(51)	23	45.1
	Dry	(0)	0	0

Number subjects examined in parentheses ( ).

Adapted from Petrakis et al, 1971.

Others have also investigated the wet/dry cerumen situation. McCullough and Giles found the

prevalence of "wet" ear wax to be 0.550 in a sample of 299 Sioux specimens. They demonstrated a close correlation between cerumen type and environment. Dry cerumen may have a selective advantage in dry and/or cold conditions. They studied the prevalence of wet cerumen in "Mongoloid" populations in relation to the mid-winter dew point temperature, and found correlation coefficients of 0.76 to 0.86. Because otitis externa is more common in the tropics, these workers suggested external otitis might be the selective agent responsible for maintaining a high prevalence of wet cerumen in populations inhabiting the tropics.[9]

Tato (personal communication) reported clinical observations in Quechuas and Aymara Indians living in the very dry mountains and highlands of Peru and Bolivia. He estimated that 90% have dry cerumen.[10]

Personal observations relating to Toholohol, Chol, Lacandones, and other Indians at a mission hospital run by the Presentation Sisters at Altamarino, Chiapas, Mexico may be relevant:

1. The cerumen in the Indians' ears was almost universally of oily consistency, there being only an occasional example of flaky wax. Most of the people were likely genetically pure Indian, with some occasional mixture of Mexican blood.
2. The people of full Indian blood has no body hair on the chest, the axillae, and little or none in the pubic area.
3. The Indian people do not have the characteristic body odor associated with Caucasians, despite infrequent bathing.[11]

Petrakis in 1971 reported correlation of wet cerumen in Japanese women living in California, with a higher incidence of breast cancer. The mortality from breast cancer is low in Oriental populations, intermediate in Eastern Europe and the Middle East, and highest in Western Europe and in the United States since breast glands, certain axillary sweat glands and cerumen glands are part of the apocrine gland system, and their secretions are similar biochemically, Petrakis theorized "that the apocrine system's genetically determined variations may influence susceptibility to breast cancer."[12]

In 1984, Stone and Fulghum reported an investigation of the bacteriostatic effect of cerumen in the external auditory canal. They found the viability of seven species of bacterial wax decreased by treatment with a 3% suspension of wet-type human cerumen. The bacterial species evaluated included Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus pyogenes, Propionibacterium acnes, Corynebacterium spp, Esherichia coli, and Serratia marcescens. Pathogenic species seemed most susceptible to inhibition by cerumen. There was little difference in the bacteriacidal activity of dry vs wet cerumen.[13]

CONCLUSIONS

1. Cerumen is not a frequent cause of hearing loss, unless it has been pushed against the tympanic membrane.
2. Dry cerumen is prevalent in Native Americans in South Dakota, and elsewhere. It is influenced by environment, and may change in character seasonally. Dry type cerumen correlates directly with the degree of Indian blood.
3. The clinical observation that in South Dakota Native Americans, external otitis is less frequent than in the general population, is supported by observations of others, and by chemical analysis.
4. These findings, as well as those of Petrakis, McCullough, and Giles[2] tend to disprove the original opinion by Senturia that cerumen has little or no relation to ear canal infections.
5. Cerumen serves a purpose; fastidiousness should not thwart this function. The old aphorism, "Never clean your ear with anything smaller than your elbow" remains sound.

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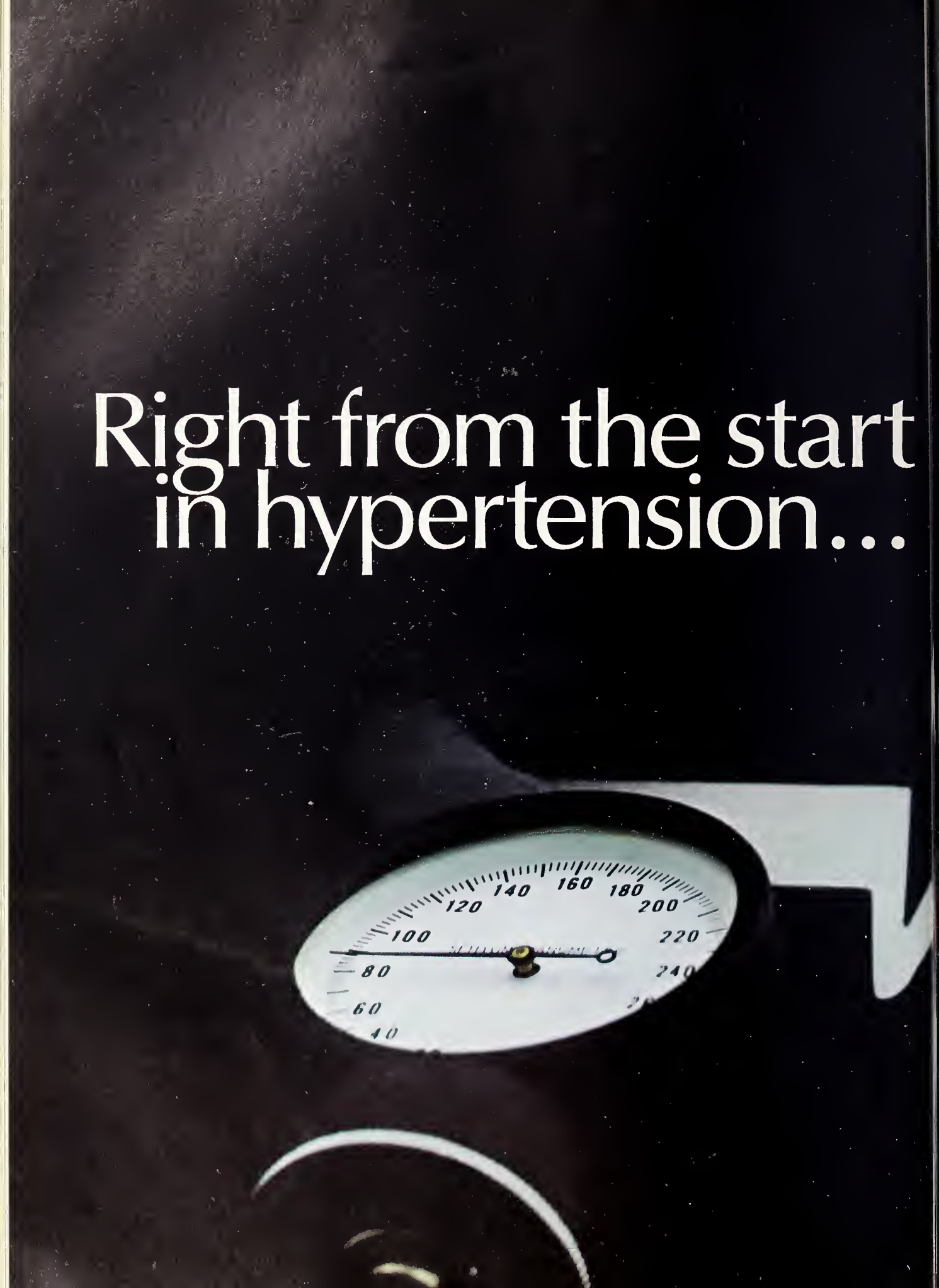

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Once-daily INDERAL LA (propranolol HCl) avoids the risk of diuretic-induced ECG abnormalities due to hypokalemia.[1,2] In addition, INDERAL LA preserves potassium balance without additive agents or supplements while providing simple, well-tolerated therapy with broad cardiovascular benefits.

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For beta-1/beta-2 blockade

Once-daily INDERAL® LA

(PROPRANOLOL HCl) LONG ACTING CAPSULES

80 mg 120 mg 160 mg

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Please see brief summary of prescribing information on the next page for further details.

Once-daily For beta-1/beta-2 blockade INDERAL® LA (PROPRANOLOL HCl) LONG ACTING CAPSULES

The appearance of these capsules is a registered trademark of Ayerst Laboratories.

BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of symoathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose. There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

REFERENCES

1. Holland OB, Nixon JV, Kuhnert L: Diuretic-induced ventricular ectopic activity. *Am J Med* 1981;70:762-768. **2.** Holme I, Helgeland A, Hjermann I, et al: Treatment of mild hypertension with diuretics. The importance of ECG abnormalities in the Oslo study and in MRFIT. *JAMA* 1984;251:1298-1299.

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A LOOK BACK WITH PRIDE

"April showers bring May flowers" is a statement meaning that spring and summer are right around the corner. It is interesting how, when one is busy, the months seem to rush by. This past year has certainly been a busy one for me. It has been a year of remarkable experiences, a year which I shall never forget.

My list of credits for this "Kaper"
Would be too long to list on paper.
But if I had a big marquee
I'd put it up for all to see.
I'd name them all and for a start
I thank each one who had a part.

Our spouses and children and baby sitters,
The Medical Association and Auxiliary for not being quitters.
The Board, Editor, all Officers and By-Law makers
The fund raisers and money takers.
AMA-ERF, Legislation and Health Projects, too.
That is — just to mention a few.

All the Chairmen and their Committees.
Convention, Standing and Special duties.
Our gals — how we prize them!
Please take time to acknowledge them.

1985 is our 75th Anniversary . . .
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With deepest humility and a sincere feeling of dedication, I accepted the responsibility with which you entrusted upon me — the highest honor of the Auxiliary. My heartfelt thanks to you, the Auxiliary, for this opportunity. I hope I have served you well.

Mary Wrage

Mary Wrage, President
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Elderly Man With Obstructive Jaundice of Three to Four Months' Duration

David A. Ellerbusch, M.D.*
Discusser
John F. Barlow, M.D.†
Editor

Case # 1051147 (84-2332)

This 76 year old Caucasian male known hypertensive was admitted to Sioux Valley Hospital for jaundice of three to four months' duration.

At the time of the onset of the jaundice there was accompanying slight anorexia, lightening of the stool color and darkening of urine color. There was no abdominal pain, nausea, vomiting, diarrhea or other gastrointestinal complaints. He was seen by a physician in another state and told he had an elevated bilirubin concentration at 4 mg% and that tests for hepatitis were inconclusive.

On returning home the patient continued to have the above symptoms and had an abdominal computer tomographic scan (CT) with no abnormality found including no evidence of pancreatic tumor. An upper gastrointestinal series showed an obstructing mass in the middle portion of the duodenum. During the months since onset of his illness the patient had had a 25 pound weight loss but his bilirubin level showed some decline. At no time were there chills, fever, cough, evidence of bleeding from the gastrointestinal tract or other symptoms. Stool guaiac tests were negative on several occasions and serum amylase was normal. An alkaline phosphatase was slightly elevated.

There was no history of serious illnesses or hospitalizations other than that the patient was on antihypertensive medications, most recently chlorthalidone. The patient was a non-smoker and denied excessive use of alcohol.

PHYSICAL EXAMINATION: Temperature 37.5°C, pulse 81/minute and regular, respirations 16/minute and regular, blood pressure 145 systolic and 62 diastolic, weight 76 kg, height 5′8″ (173 cm). Patient was a well-developed well-nourished gentleman in no acute distress who was alert, pleasant, cooperative and oriented. Examination of the head and neck revealed only moderate bilateral cataracts. The patient had dentures. There were good carotid pulses. The lungs were clear to auscultation and percussion. The heart was not enlarged and had a normal rhythm without abnormal sounds or murmurs. There were no palpable masses or organs in the abdomen which was nontender. There was a questionable fullness in the hypogastrium in the midline. Rectal examination, examination of the extremities, and neurologic examination were within normal limits.

LABORATORY DATA: Urinalysis was yellow, clear, specific gravity 1.024, negative for protein, glucose, ketones, hemoglobin, and positive for bilirubin; sediment was negative. Admission hemoglobin 13.8 gm/dl, hematocrit 41% with normal red cell indices; total leukocyte counts 7.3 × 10^9/L with a differential of 68% segmented neutrophils, 1% neutrophilic bands, 21% lymphocytes, 6% monocytes, 3% eosinophils and 1% basophils. Platelet count 332 × 10^9/L; the peripheral blood smear showed no abnormalities; prothrombin time 13.1 sec with a 13 sec control, partial thromboplastin time 26 sec (normal); sodium 140 meq/L, potassium 3.3 meq/L, chloride 106 meq/L, CO_2 content 26 mm/L; lactic dehydrogenase (LD), asparate aminotransferase (SGOT, AST), total protein, phosphorus, glucose, blood urea nitrogen, creatinine, uric acid, and cholesterol were within normal limits; alkaline phosphatase was over 700 IU/L (0 to 115 ru/L), bilirubin 2.2 mg/dl total, calcium 8.3 mg/dl (normal 8.4-10.7 mg/dl); two stool guaiac examinations were negative. An electrocardiogram was within normal limits. An operation was performed.

DR. ELLERBUSCH: The patient's main presenting complaint was that of jaundice. The lightening of the stool color and the darkening of the urine color is the classic presentation of obstructive jaundice. This could be secondary to intrahepatic or extrahepatic obstruction.

The two most common causes of intrahepatic cholestasis are drug induced and infectious. Oral contraceptives, androgens and chlorpromazine are most commonly implicated. Chlorthalidone, which this patient received, is also one of the drugs which may cause cholestasis. While it is feasible that this drug may have contributed to the jaundice it hardly accounts for all the symptoms and findings in this patient. The normal transaminase values (AST, SGOT) in this patient with marked elevation of the alkaline phosphatase favors an extrahepatic obstruction as the cause of jaundice as opposed to a hepatocellular disease such as viral hepatitis.

Extrahepatic biliary obstruction is caused by mechanical obstruction which may be due to stones,

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strictures and more rarely tumors. A common duct stone classically occurs in a patient with cholelithiasis. Jaundice, abdominal pain and fever and chills indicating cholangitis are common. This patient has been afebrile with no history of abdominal pain whatsoever. This is a very unlikely presentation of a common duct stone.

Stricture of the common bile duct in the absence of previous surgery is quite rare. This possibility is quite low on the differential diagnosis list.

This brings us to the more rare but, in this case, the more logical cause of extrahepatic obstruction, that caused by tumor. The onset of jaundice in the absence of significant pain, fever or chills but with slight anorexia and significant weight loss is classic for a group of tumors commonly called the periampullary tumors, an appellation given because of their proximity to the ampulla of Vater. One of the earliest signs of these tumors is jaundice.

These tumors basically consist of 4 types:

1) Carcinoma of the head of the pancreas — (By far and away the most common of this group)
2) Carcinoma of the ampulla of Vater
3) Carcinoma of the extrahepatic bile ducts
4) Duodenal carcinoma

The last three are all very uncommon.

Because pancreatic carcinoma is by far and away the most common of the four and most of us have seen cases of this disease, I will elect not to discuss pancreatic carcinoma in detail. The possibility remains that this case could be due to pancreatic carcinoma but I believe the following key points are against this diagnosis:

1) The jaundice in this patient was fluctuating while jaundice due to pancreatic cancer is steady and unrelenting in most cases.
2) While the tumor may have been missed on CT scan the accuracy of the scanner is over 80% in lesions larger than 2-3 cm.

Indeed the tumor would certainly need to be at least that large in order to show up on upper gastrointestinal series as a mass effect.

Carcinoma of the ampulla of Vater is so rare that reasonable estimates of its incidence cannot be made. Because of their strategic location, frequently clinical manifestations (particularly jaundice) occur when the tumor size is still measured in millimeters. Rarely do they exceed 3.5 cm. The majority of these are soft and polypoid in nature. The surface is frequently necrotic and often shows ulceration. Occasionally this is so prominent that the tumor may be misdiagnosed on surgical inspection as a post-bulbar duodenal ulcer. Pain tends to be a less common symptom than in pancreatic carcinoma. Fever and chills secondary to cholangitis is extremely rare. Gastrointestinal bleeding due to the tendency for these tumors to ulcerate is a common finding though rarely massive. The acholic stool color mixed with blood in the stool from bleeding produce the so called "silver stool sign of Thomas."

There is a palpable gallbladder in 26 to 52% of the cases.

One of the most distinctive features of the obstructive jaundice in carcinoma of the ampulla of Vater is its tendency to flucuate, observed in over ½ of the patients.

The tumor may be diagnosed by several methods. An upper gastrointestinal series reveals a deformity in the 2nd portion of the duodenum in 25% of the patients and this is accentuated if hypotonic duodenography is used.

Cholangiography by intravenous technique in anicteric or mildly icteric patients, or by percutaneous transhepatic technique, immediately preoperatively or by T-tube at operation, will usually demonstrate the lesion well. Duodenoscopy in the hands of a skilled examiner will allow both direct visualization and biopsy. However, interpretation of the biopsy must be held in suspicion as ampullary cancers may be misdiagnosed as benign on endoscopic biopsy.

Initial optimism that the cure rates of these lesions would be high due to the fact that they cause jaundice early in the course was unfortunately not found to be true. In a study of 150 patients, the mean 5 year survival was 24-30% and 3% survived 10 years. In this study local findings at initial surgery were quite important. Patient with papillary tumors had a survival rate twice that of patients with ulcerating lesions. When regional nodes were involved with tumor, mean survival was 1/3 to 1/2 that of patients without regional nodes regardless of the type of operation.

The operation of choice is the Whipple procedure (pancreaticoduodenectomy). In fact, if there is any chance for surgical resection this procedure was recommended by almost all my reading for all 4 types of periampullary carcinoma. In ampullary carcinoma the Whipple is less of technical problem with "only" 12.4% operative deaths as compared to 18.5% for pancreatic carcinoma. The most common form of the periampullary carcinoma is adenocarcinoma. Often at surgery it is difficult to determine the original site of the tumor as it has already spread to adjacent structures. This gives more support to the idea of performing a Whipple in all surgically resectable periampullary carcinomas.

The most definitive palliative procedure for unresectable cases is cholecystoduodenostomy to relieve

the jaundice. Radiation therapy has no role and experience with chemotherapy is limited to 5 fluorouracil which has been used because other adenocarcinomas of the gastrointestinal tract have responded to it.

Adenocarcinoma of the extrahepatic bile ducts occurs at an average age of 70 years and cholelithiasis is present in 40-50% of cases. There is an increased incidence in patients with ulcerative colitis even after colectomy. The disease also occurs at a younger age in these patients. There is a high incidence of this disease in parts of the Orient where there is endemic Clonorchis sinensis infection. Although the tumor may arise in any of the biliary ducts, by the time of laparotomy, extensive tumor invasion often obscures the site of origin. The lesion may appear grossly as a focal or diffuse stricture, a thickening, or a nodular mass. The first two are easily confused with benign processes such as posttraumatic stricture or sclerosing cholangitis. Jaundice develops early and, although the lesions may be small, curative resection is usually impossible due to local or distant spread. Cholangitis and biliary colic are rare.

A palpable gallbladder may be present if the common duct is obstructed and the cystic duct is patent. This is a highly reliable sign (Courvoisier's sign) but failure to detect a palpable gallbladder does not rule out neoplasm. Failure to detect gallbladder enlargement may be due to the fact that an enlarged liver may obscure the gallbladder enlargement, the tumor may be proximal to the cystic duct, blockage of the cystic duct is present, or the gallbladder may be nondistensible due to disease.

Jaundice in carcinoma of the bile ducts may rarely fluctuate. Occult blood in the stool is more common in carcinoma of the ampulla of Vater but may also be present in carcinoma of the bile ducts or even pancreatic carcinoma. Transhepatic cholangiography may be helpful in diagnosis of bile duct carcinomas. ERCP (endoscopic retrograde cholangiopancreatography) may also be useful but infection may be introduced proximal to the obstruction.

Adenocarcinoma of the junction of the hepatic duct (Klatskin tumor) behaves as a distinct clinical entity often presenting as a picture of intrahepatic cholestasis with minimal elevation of the bilirubin but marked elevation of the alkaline phosphatase when obstruction is confined to one duct. As the tumor spreads to the main hepatic duct, jaundice becomes more intense. The surgeon may find a small common duct and a collapsed gallbladder but the tumor may be hidden high in the hilum. Only local of diffuse stricture may be seen with or without evidence of invasion of extrahepatic tissue. Probing the ducts and operative cholangiograms must be obtained to delineate the biliary tree abnormality. Although these lesions are usually not resectable, considerable palliation may be obtained by inserting a T-tube across the stricture caused by the tumor to reestablish biliary flow. Survival up to 5 years with this method of therapy has been obtained. This lesion must be differentiated from entities such as primary biliary cirrhosis which produces prolonged intrahepatic cholestasis in middle aged females and is often associated with an elevated level of antimitochondrial antibody in the serum.

Duodenal adenocarcinoma is a relatively rare lesion, as are all carcinomas of the small intestine, with a peak incidence at age 70 and a slight male predominance. Duodenal carcinoma is slightly more common than in the jejunum or ileum. Jaundice is common, as is pain, but a palpable mass is less frequent. Duodenal carcinoma is often diagnosed by a filling defect or mucosal ulceration on the upper gastrointestinal series. Computer tomography or endoscopy may also visualize the lesion.

More remote possibilities in this case include carcinoid of the ampulla of Vater or lymphoma of the duodenum. Metastasis from another site to the duodenum or benign duodenal neoplasm could cause this picture. This patient had signs, symptoms, laboratory and x-ray findings overall most compatible with an adenocarcinoma of the duodenum as the specific type of periampullary tumor.

Dr. Ellerbusch's Diagnosis
Adenocarcinoma of the Duodenum

DR. BARLOW: We received from surgery biopsies of a hyperplastic lymph node and a duodenal tumor called villous adenoma with severe atypia on frozen section. Separately submitted was a small 5 cm x 2 cm fibrotic gallbladder with chronic cholecystitis and cholelithiasis. The fibrotic and inflammatory process in the gallbladder is an explanation for the failure of the gallbladder to dilate and become a palpable mass secondary to common duct obstruction (Courvoisier's sign). The major specimen contained a pancreaticoduodenectomy composed of distal stomach with 21 cm of duodenum and a portion of the head of the pancreas measuring 6 x 6 x 4 cm. Six centimeters from the pylorus in the duodenum was an 11 x 9 cm sessile papillary tan to red tumor which was 6 cm from the distal duodenal margin.

The tumor had a central 2 cm firm superficially ulcerated area (Fig. 1). On microscopic section, there was an infiltrating adenocarcinoma which encroached on the bile duct wall. (Fig. 2) The resection margins were free of tumor but one of twelve lymph nodes contained metastatic adenocarcinoma.

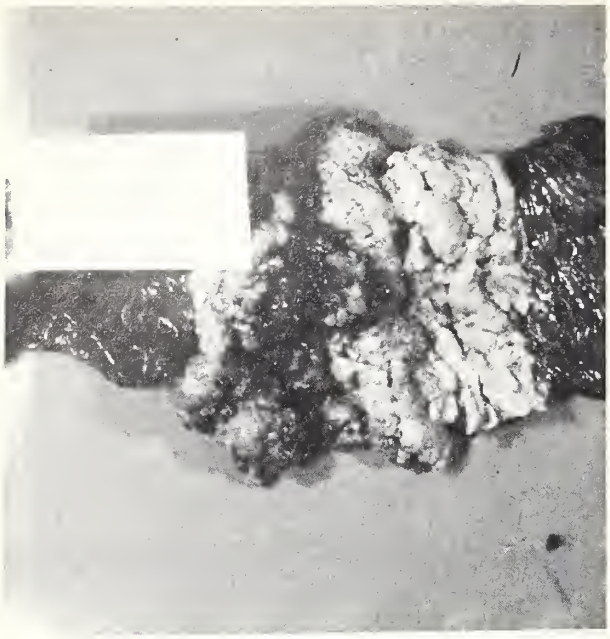

Figure 1
Villous adenoma with central adenocarcinoma (H&E). The carcinoma appears darker than the surrounding paler villous adenoma.

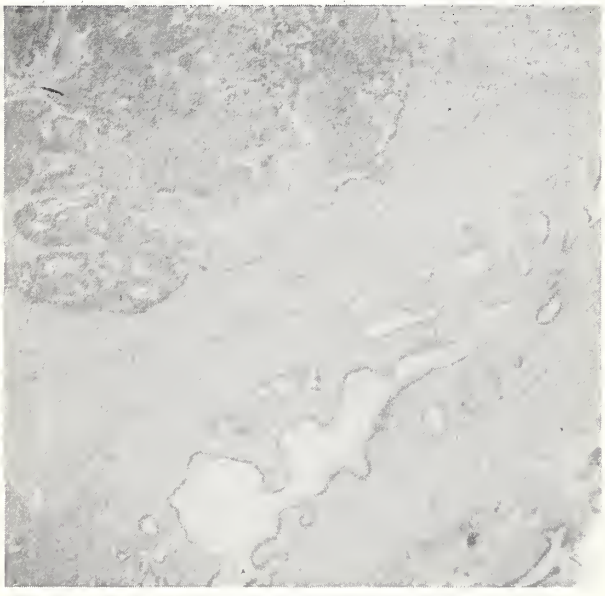

Figure 2
Infiltrating adenocarcinoma (solid area upper right encroaching on bile duct epithelium (lower left).

FINAL ANATOMIC DIAGNOSES
ADENOCARCINOMA ARISING IN VILLOUS ADENOMA OF THE DUODENUM

Villous adenomas of the gastrointestinal tract are most common in the colon and are rare in small bowel. Less than 50 have been reported in the duodenum with or without involvement of the ampulla of Vater. They are more common in the first portion of the duodenum and decrease in incidence as the fourth portion of the duodenum is reached. They are less common in the remainder of the small bowel than they are in the duodenum. They occur with about equal sex incidence and are most common in the 40-70 year age group. They may grow slowly and be asymptomatic or produce gastrointestinal bleeding with anemia. Obstructive symptoms and chronic dyspepsia, suggestive of cholecystitis, may occur with duodenal villous lesions but the most common symptom of duodenal villous adenoma is obstructive jaundice. The common bile duct is dilated in 70% of cases and calculi have been found in the gallbladder or bile ducts in 13-20% of cases. They range in size from 4 m to 8.5 cm. This makes our case one of the largest reported.

As in villous adenomas anywhere in the gastrointestinal tract there is a high incidence of adenocarcinomas (25-50%) arising in these lesions. The malignancy may be in situ or invasive. Cytologic atypia is present in the majority of cases. A major clinical problem with villous adenomas anywhere in the gastrointestinal tract is that demonstration of malignancy by endoscopic biopsy may be difficult. For this reason, conservative resection carries a significant risk of inadequate excision if malignancy is found on the resected specimen but was not seen in single or multiple endoscopic biopsies.

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Council Meeting Highlights

The Council of the South Dakota State Medical Association met on Friday, January 11, 1985, in Sioux Falls, South Dakota. Following are items of business transacted at that meeting.

1. STATEWIDE TUMOR REGISTRY. The Council voted to approve the concept of a statewide tumor registry; that this would not be a reportable disease, that information collected would be used for statistical purposes only and that protection of patient confidentiality would be paramount.
2. PROTOCOL FOR MANAGEMENT OF PHYSICIANS NEUROLOGICALLY IMPAIRED OR SENILE. The Impaired Physicians Committee submitted protocols for dealing with neurologically impaired or senile physicians who are no longer competent practitioners and the Council approved these protocols for use in South Dakota.
3. PUBLIC RELATIONS PROGRAM. The Council directed the Commission on Internal Affairs, Communications and Liaison to proceed with a public relations program on behalf of South Dakota physicians. This program is to be directed at the issue of the cost of medical care, and the Association is directed to use a speakers' bureau, brochures, and public service spot announcements prepared by the American Medical Association rather than paid advertisements. This is just the beginning of this program and the continuation will be a high priority for this Commission.
4. 1985 LEGISLATIVE SESSION. The Council determined the Association's legislative program for 1985. These bills were reported to the members in the legislative Grab Bag. One bill of primary concern would allow optometrists to prescribe therapeutic drugs. The State Medical Association opposed this bill and requested assistance from the South Dakota Academy of Family Physicians in opposing this legislation.
5. AMERICAN FAMILY INSURANCE. American Family Insurance has been contacted by the Association's legal counsel and a meeting will be held between their representatives and the Executive Commission in an attempt to settle problems which have arisen between American Family and South Dakota physicians over the past few years.
6. GUIDELINES FOR NEWBORN AND OBSTETRICAL CARE. Previously a special subcommittee was appointed to develop these guidelines. This has been done and the guidelines were submitted to the district medical societies for review and recommendation. These recommendations were considered by the Council along with the proposed guidelines. The Council voted not to adopt the guidelines but recommended that continuing medical education programs be developed and physicians who are delivering obstetrical and newborn care be encouraged to attend. ■

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Wyeth **Jerry Maginn**

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June

Topics and Advances in Pediatrics, Radisson Univ. Hotel, Minneapolis, MN, June 5-7. Fee: $225. 18.5 hrs. AAFP & AMA Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., S.E., Minneapolis, MN 55455. Phone: (612) 373-8012.

Clinical Hypnosis, Earle Brown Ctr., U. of Minn., St. Paul, MN, June 7-8. AMA Category I credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Surgery for Primary Care, Madden's, Brainerd, MN, June 8-9. AMA Category I credit hrs. available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

2nd National Behavioral Pediatrics Conference, Earl Brown Cont. Ed. Ctr., St. Paul, MN, June 20-22. Fee: $250. 15½ hrs. AMA Category I & AAFP credits. Contact: Audrey Chan, CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Management of Common Psychiatric Problems in Primary Care, Breezy Point Resort, Brainerd, MN, June 21-23. 10½ hrs. AMA Category I & AAFP credits. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Breast and Endocrine Surgery, Willey Hall, U. of Minn., Minneapolis, MN, June 24-26. Fee: $400. 22 hrs. AMA Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Teton's General Pediatric Conference, Jackson Hole Racquet Club, Jackson, WY, June 30-July 5. Fee: $275. 20 hrs. AMA Category I & AAFP credits. Contact: Marjorie Adey, Coord., CME, U. of Neb. Med. Ctr., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402) 559-4152.

July

Teton's Sports Medicine Conference, Jackson Hole Racquet Club, Jackson, WY, July 7-11. Fee: $275. 16 hrs. AMA Category I & AAFP credits. Contact: Marjorie Adey, Coord, CME, U. of Neb. Med. Ctr., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402) 559-4152.

Spine Problems: Controversies and Updates, Hyatt Regency, Minneapolis, MN, July 10-13. Fee: $350. 24½ hrs. AMA Category I credits. Contact: CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Orthopaedic Surgery: Spine, Hyatt Regency Hotel, Minneapolis, MN, July 10-13. Fee: $350. 24.5 hrs. AMA Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Human Aging, Willey Hall, U. of Minn., Minneapolis, MN, July 17-18. AMA Category I credit hrs. available. Contact: CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Paris 1985: Advances in Diagnostic Imaging, Intercontinental Hotel, Paris, France, July 22-26. Fee: $350. 20 hrs. AMA Category I credits. Contact: Educational Symposia, Inc., P.O. Box 17241, Tampa, FL 33682. Phone: (813) 879-8765.

Minnesota Symposium on Nuclear Medicine, Radisson Univ. Hotel, Minneapolis, MN, July 25-27. AMA Category I credits available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Interventional Radiology, Malcolm Moos Health Sci. Tower, U. of Minn., Minneapolis, MN, July 25-27. AMA Category I credits available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

August

Wilderness Medicine, Lake Tahoe, NV, Aug. 12-16. 23 hrs. AMA Category I credits. Contact: Mark Bracher, M.D., Off. of CME, M-017, U. of San Diego, La Jolla, CA 92093. Phone: (619) 452-3940.

Surgery of the Aging Face, Marriott Hotel, Portland, OR, Aug. 19-22. Fee: $695. Contact: CME, Oregon Health Sciences Univ., 3181 SW Sam Jackson Park Rd., Portland, OR 97201. Phone: (503) 225-8700.

Pediatric Brain Tumors, Radisson Univ. Hotel, Minneapolis, MN, Aug. 21-23. Fee: $250. 16 hrs. Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

The Eighth Annual Black Hills Seminar

The Eighth Annual Black Hills Seminar on Advances in Clinical Pediatrics—June 19, 20 and 21, 1985, at Sylvan Lake Resort, Custer, South Dakota, sponsored by the Department of Pediatrics and Adolescent Medicine, University of South Dakota School of Medicine. Guest faculty include Drs. James C. Overall, Frederic Silverman, Alvin Jacobs, Kenneth Jones and Jon A. Vanderhoof. For complete conference information, contact:

Lawrence R. Wellman, M.D.
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The Spectrum of Therapeutic Endoscopy

USD School of Medicine

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The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed:

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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This will be the first of regular updates on the progress and concerns of your physician peer review program — South Dakota Foundation for Medical Care (SDFMC). As you are probably aware, SDFMC has contracted with the Health Care Financing Administration to be the Peer Review Organization (PRO) for South Dakota in order to retain local control of this federally mandated function. As the PRO, we have the following responsibilities pertaining to inpatient hospital services and quality of care received by Medicare and Medicaid recipients.

—Determine whether the quality of services meets professionally recognized standards of health care.

—Determine the completeness, adequacy, and quality of hospital care provided.

—Determine the medical necessity, reasonableness, and the appropriateness of hospital admissions and discharges, and additional payment sought for outlier cases.

—Determine whether the services provided on an inpatient basis could, consistent with the provision of appropriate medical care, be effectively furnished on an outpatient basis.

—Determine whether a physician has misrepresented admission or discharge information, or has taken an action that results in the unnecessary admission or multiple admissions of an individual.

—Determine the validity of diagnostic and procedural information supplied by the provider.

These are the primary functions of SDFMC which will result in the assurance of appropriate utilization and quality of care for your patients. Through the physicians' continuing cooperation with this program, we can continue to benefit our patients and keep the review of physician services in the hands of those most qualified to perform this function — SOUTH DAKOTA PHYSICIANS.

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The Spectrum of Therapeutic Endoscopy

John B. Marshall, M.D.*
Kenneth A. Vogele, M.D.†

ABSTRACT

The last five to ten years have witnessed many exciting therapeutic applications of GI tract endoscopy. The emerging modality of therapeutic endoscopy is providing safe and cost-effective alternatives to traditional surgical approaches to a variety of GI problems.

Fiberoptic endoscopy of the gastrointestinal (GI) tract constitutes one of the outstanding diagnostic advances in medicine over the past quarter of a century. The last five to ten years have witnessed many exciting therapeutic applications of GI tract endoscopy. In many instances, endoscopic procedures represent safe and cost-effective alternatives to traditional surgical approaches. This paper will overview the areas of therapeutic endoscopy.

Foreign Body Removal

Although most foreign bodies of the gut pass spontaneously, some become impacted or cause perforation. Fiberoptic endoscopy has greatly simplified the removal of foreign bodies from the esophagus and stomach.

The individuals most prone to foreign body ingestion are children, individuals with esophageal strictures, mentally retarded individuals, psychiatric patients, and prisoners.

Except in very young children, endoscopic foreign body removal can be accomplished under local sedation as with routine diagnostic endoscopy. Safe foreign body removal often requires considerable dexterity and ingenuity, and is aided by having available various endoscopic accessories (e.g. alligator forceps, snares, graspers). A protective overtube may be useful in the removal of sharp objects and when multiple passes must be made with the endoscope.

The indications for endoscopic foreign body removal include: (i) impaction in the esophagus; (ii) the presence of sharp and pointed objects; (iii) foreign bodies composed of toxic materials; and (iv) objects greater than 2 cm in width (or diameter) or greater than 5 cm in length.[1, 2] Blunt, non-toxic, and shorter gastric foreign bodies can be managed conservatively, allowing a period of 2 weeks for the object to pass spontaneously.

Two specific foreign bodies require brief specific comment. First, meat boluses lodged in the esophagus will occasionally pass spontaneously after the administration of 1 mg of intravenous glucagon. This can be tried before resorting to endoscopic removal. Second, disc (''button'') battery ingestions have increased in recent years with reports of major injury associated with these ingestions. Available information indicates that disc batteries lodged in the esophagus should be removed with endoscopy. Batteries which have passed into the stomach need only be followed-up and patients observed for symptoms.[3]

In the past 2½ years, we have removed foreign bodies from 23 patients at the Rapid City Regional Hospital. Patient age has ranged from 1 year to over 80 years of age. The foreign body was present in the esophagus in 17 cases and in the stomach in 6 cases. The foreign bodies have included 6 bones, 6 meat boluses, a plum pit, an erythromycin tablet, a spoon handle, a pen shaft, a 5 cm pin, a thumb tack, staples, a disc battery, a 7 cm toy truck axle, a jack, and a tiddlywink. That our series has a South Dakota flavor is supported by the fact that one meat bolus was buffalo meat and one of the bones was a pheasant bone. We were able to remove the foreign bodies with fiberoptic endoscopy in 22 of the 23 cases (96%). One case of a pork bone impacted in

* Gastroenterologist, Rapid City Medical Center, Rapid City, SD.
† Gastroenterologist, Rapid City Medical Center, Rapid City, SD.

the proximal esophagus required rigid endoscopy under general anesthesia.

Endoscopic Injection Sclerotherapy for Bleeding Esophageal Varices

Bleeding from esophageal varices represents the major life-threatening consequence of advanced cirrhosis of the liver. It is estimated that more than one-third of all patients die within six weeks after hospitalization for an initial variceal hemorrhage. Episodes of rebleeding in surviving patients are also very common.

Endoscopic injection sclerotherapy for bleeding esophageal varices has gained interest because of the disappointing results of conventional medical therapy (intravenous vasopressin and balloon tamponade) and surgical therapy (portacaval shunt). Injection sclerotherapy involves the passage of an endoscope into the distal esophagus and the injection of a sclerosing agent into or around esophageal varices.

In this country, endoscopic injection sclerotherapy is almost always performed with a fiberoptic endoscope. A short needle (covered by a protective sheath) attached to a flexible tubing is inserted through the biopsy channel of the endoscope (Figure 1). Under direct visualization, the needle is pushed out of its protective sheath and gently thrusted into the varix distally near the gastroesophageal junction. Sclerosant (such as sodium morrhuate or sodium tetradecyl suflate) is then injected directly into the varix. All varices are similarly injected, sometimes at more than one esophageal level. Many European sclerotherapists perform their injections to the side of the varices.[4] Several sclerotherapy sessions are generally necessary until the varices are completely sclerosed (obliterated). Occasional periodic follow-up is necessary afterwards, so that any varices which reform can be injected.

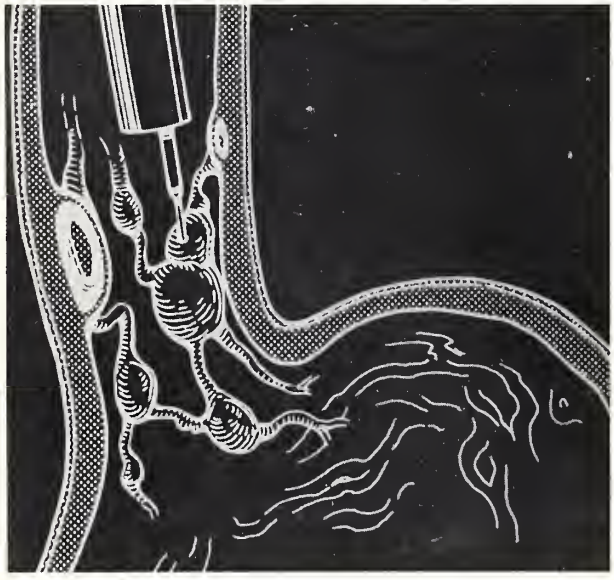

FIGURE 1A
Sclerosing solution is injected directly into the varix through a short needle attached to a flexible tubing which has been inserted through the biopsy channel of the endoscope. Used with permission from Robert Sanowski, M.D., Phoenix, AZ.

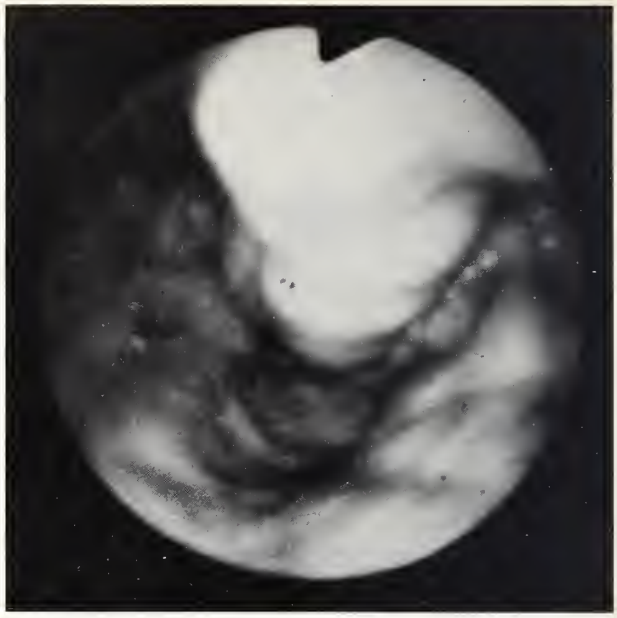

FIGURE 1B
Endoscopic picture revealing large varices in the distal esophagus in a patient with a recent variceal bleed.

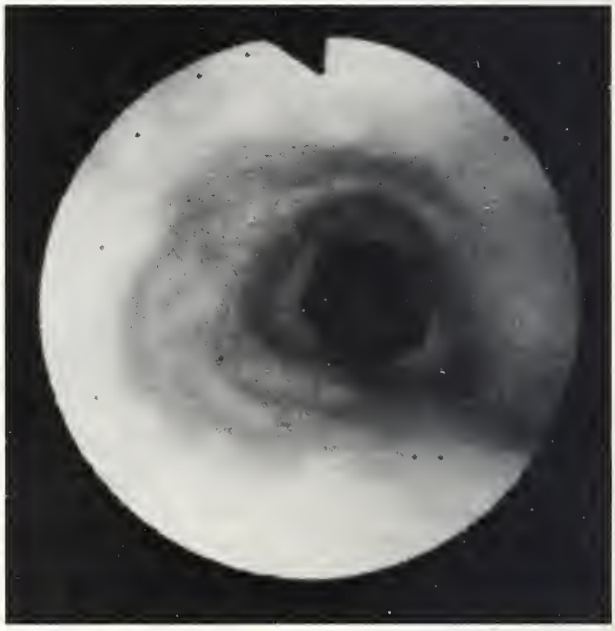

FIGURE 1C
Endoscopic picture from the same patient as 1B after several sessions of injection sclerotherapy. All varices have been obliterated.

Sclerotherapy is indicated for acutely bleeding varices or previous suspected variceal bleeding with the aim of obliterating the varices and thereby stop-

ping and/or preventing further bleeding. It is not presently being used as a prophylactic measure in patients with varices who have not bled.

The most common side effects of injection sclerotherapy are transient chest pain, fever, and esophageal ulcers.[5] These are usually not serious and resolve spontaneously. Esophageal stricture occasionally occurs after the procedure, but is usually easily treatable with esophageal dilation. More serious side effects occasionally occur and can include esophageal perforation.

The initial reported experience with sclerotherapy is that it is less costly than portacaval shunt and at least as effective for the treatment of bleeding esophageal varices.[6] The procedure may also reduce long-term mortality.[7] Our uncontrolled experience at the Rapid City Regional Hospital with endoscopic sclerotherapy is consistent with this. We have been doing the procedure since mid 1982 with a series of 15 patients.

Endoscopic Hemostasis

Despite recent advances in critical care and early accurate diagnosis, the mortality associated with acute upper GI bleeding has remained at 8-10% for the past 40 years.[8] Though most patients stop bleeding spontaneously, about 10-20% will have persistent bleeding. This has stimulated the development of endoscopic techniques to control GI bleeding.

Of the various endoscopic methods that have been studied for non-variceal bleeding, only electrocoagulation and laser photocoagulation appear to be of practical value.[9-11] Electrocoagulation involves the use of an electrical current to generate heat, which results in the evaporation of cell water and subsequent tissue coagulation. Specialized endoscopic probes (monopolar and bipolar) have been developed to reduce the amount of tissue damage. With laser photocoagulation, hemostasis is achieved when light energy is converted to thermal energy within tissue, resulting in the coagulation of protein. Argon and neodymium-YAG lasers have been used with fiberoptic instruments.

To date, endoscopic electrocoagulation and laser photocoagulation have been primarily limited to a few specific clinical situations, such as a visible vessel within the base of an ulcer. The usefulness of these techniques and whether they decrease mortality remains to be established. Electrocoagulation has the advantage over laser therapy in terms of cost and portability. However, there is no information to suggest that one of the modalities is more efficacious than the other for the therapy of acute upper GI bleeding. Further clinical evaluation of these methods is needed.

Endoscopic hemostasis is also of value in the management of patients with angiodysplasias of the gut.[12] These lesions, which occur primarily in elderly patients and are most common in the proximal colon, cause repeated bleeding episodes. Blood loss can range from chronic and occult to acute and massive. Most of the experience with endoscopic management of these lesions has been with electrocoagulation, which is what we use.

Endoscopic Balloon Dilation of Gastrointestinal Strictures

Although transluminal angioplasty of the vascular tree is widespread, Gruntzig balloon dilation has only recently been adapted for endoscopic use of GI tract stenoses.[13] Gruntzig balloon dilation has been used for esophageal strictures, pyloric stenosis, stenotic post-gastrectomy anastomoses, stenoses from gastric stapling and bypass surgery, biliary strictures, and even some benign colonic strictures.

The technique involves the endoscopic placement of a guidewire through the strictured site. The endoscope is removed, but can be repassed alongside the guidewire to directly observe the dilation. Balloons (Figure 2) ranging from 4 to 20 mm's in diameter, are passed over the guidewire under fluoroscopic control and placed through the stricture. The balloon is then inflated with water. Sequential balloon inflation of the strictured area can be undertaken with balloons of progressively larger size.

FIGURE 2
Dilation set consisting of Gruntzig catheter and balloon, pressure manometer, and syringe filled with water.

The published reports of the use of hydrostatic balloons are mostly anecdotal. Additional experience will be necessary to fully define indications and efficacy.

We have used Gruntzig balloon dilation for the treatment of several difficult esophageal strictures. We have also performed balloon dilation on one high surgical risk patient with pyloric stenosis (due to chronic peptic ulcer disease) and another high risk

patient with severe gastrojejunostomy anastomosal stenosis after a prior gastric resection.

Percutaneous Endoscopic Gastrostomy

Percutaneous endoscopic gastrostomy (PEG) is a recently described non-operative technique for placement of a permanent gastrostomy tube for long-term nutritional support.[14, 15] It is a technique available for patients with an intact gut, but who are unable to obtain nourishment because of problems such as neurologic swallowing difficulties or head and neck abnormalities. PEG has the advantages of safety, lack of need for general anesthesia, ability to perform it at beuside (or in the endoscopy unit), and remarkable tolerance by patients.

The procedure is done at bedside or in the endoscopy lab. The patient is placed supine and the skin over the upper abdomen cleaned and draped using sterile surgical technique. The gastroscope is then passed into the stomach and air insufflated. After dimming the room lights, the gastroscopic light is transilluminated through the anterior abdominal wall. The site for placement of the gastrostomy is selected where the distal gastric body is appositioned to the anterior abdominal wall. The abdominal wall is then infiltrated with local anesthesia and a stab wound made with a scalpel blade. A 16-gauge Medicut Catheter is then introduced percutaneously through the stab wound and into the stomach under endoscopic vision. A long, number 2 silk suture is passed through the percutaneous catheter, visualized gastroscopically, and grasped with a biopsy forceps. The suture and scope are then withdrawn out of the mouth. A modified 16 French Pezzer "mushroom" catheter is then tied to the thread from the mouth and over which a second Medicut sheath has been passed to serve as a dilator for the passage of the modified Pezzar catheter assembly through the abdominal wall. This arrangement is then coated with lubricant and pulled through the esophagus and stomach and then out the abdominal wall. The gastroscope is then reinserted, and, under direct visualization, the gastrostomy tube firmly snugged into position. A rubber seal is placed around the catheter on the outside to anchor it from this side also. Tube feedings can generally be started in a couple of hours. Patients are covered with antibiotics to prevent wound infection.

We have performed PEG in 3 patients at the Rapid City Regional Hospital, ranging in age from 62 to 90 years of age. Two of the patients had inability to swallow from strokes. The third patient had an upper cervical spinal cord injury with quadraparesis, difficulty swallowing, and the requirement of long-term ventilator management. Two of the procedures were performed in our endoscopy lab and the other one at bedside. All procedures went easily. The gastrostomy tube requires replacement once or twice per year. When worn out, the nurse or physician replaces the modified Pezzer catheter with a Foley catheter.

There are also endoscopic techniques of converting a gastrostomy to a jejunostomy.[16, 17] This can be considered in patients with significant gastroesophageal reflux (and aspiration) associated with gastrostomy feedings.

Endoscopic Retrograde Sphincterotomy and Other Therapeutic ERCP Procedures

Endoscopic retrograde sphincterotomy (ERS) is a non-operative method of removing common bile duct stones at the time of endoscopic retrograde cholangiopancreatography (ERCP).[18] The procedure has probably supplanted surgical re-exploration as treatment of most retained or recurrent common duct stones (in patients with a previous cholecystectomy). It can also be considered in high risk patients with common bile duct stones and an intact gallbladder. The procedure has a success rate of 80-95%, with a complication rate of about 7% and mortality of 1-1.5%. This compares very favorably with re-exploration and has the additional advantage of requiring a much shorter hospital stay and being less costly.

ERS is done in a fluoroscopy room using a side-viewing duodenoscope with the patient sedated. The sphincterotome knife consists of a plastic catheter containing a wire, the distal 30 mm of which is externalized at the catheter tip. Selective cannulation of the common bile duct is performed with the sphincterotome passed freely into the common bile duct. The wire is then pulled taut in about a 12 o'clock position to form a cutting bow (Figure 3). A blended cutting current is used to effect a 10-15 mm cut through the ampullary sphincteric mechanism. Many stones will pass spontaneously after an adequate sphincterotomy cut has been made. The remainder can usually be extracted with an endoscopically inserted balloon catheter or dormia basket.

We recently reviewed our experiences with ERS at the Rapid City Regional Hospital in a recent issue of the **South Dakota Journal of Medicine.**[18] Our current experience is 15 patients, of whom sphincterotomy has been successful in 12 (80%).

ERCP has also been adapted to the placement of transbiliary stents (drainage catheters) through biliary strictures and obstructing biliary ductal and periampullary carcinomas.[19] It is also possible to dilate bile duct strictures with endoscopically placed Gruntzig balloons.[20]

Endoscopic Polypectomy

Endoscopic polypectomy is a well-established

FIGURE 3A
Endoscopic cholangiogram demonstrating common bile duct stones in a patient with a prior cholecystectomy.

FIGURE 3B
Endoscopic cholangiogram (same patient as Figure 3A) done after sphincterotomy procedure and demonstrating successful removal of bile duct stones.

procedure that has greatly simplified the management of colorectal polyps, often precluding the need for surgical intervention. Most pedunculated and sessile polyps can be removed with a wire snare loop through which an electrical current is passed. This technique simultaneously cuts through the polyp and coagulates the blood vessels. Tiny polyps can be simultaneously biopsed and electrocoagulated using hot biopsy forceps.

When performed by an experienced endoscopist, polypectomy is successful in over 95% of cases, with a morbidity of 1-3% (e.g. bleeding, perforation) and mortality of less than 0.5%. Several papers review the diagnosis, management, and follow-up of colonic polyps.[1, 21, 22]

Though the flexible fiberoptic sigmoidoscope has (or soon will) replace the rigid proctoscope for the screening of colorectal neoplasms, its use should be strictly limited to diagnostic procedures. Any patient found to have rectosigmoid polyps should undergo colonic cleansing and total colonoscopy to remove any more proximally located polyps.

Endoscopic polypectomy can also be used for removal of polyps of the esophagus, stomach and duodenum.

Laser Treatment of GI Cancer

Unfortunately, many carcinomas of the GI tract are silent until patients present with obstruction or bleeding. By this time, depending on tumor location, many such lesions are neither resectable or curable.

Recently, laser therapy has been applied to the palliative management of GI tract cancer, primarily to relieve obstruction.[10, 11, 23] It has also been used to reduce blood loss. Skillfully used, laser energy can be delivered to cause destruction (necrosis) of tumor tissue.

The largest laser experience has been with cancers of the esophagus and gastric cardia. Tumors elsewhere in the stomach, duodenum ampulla, colon and rectum have also been treated with endoscopic laser therapy. The eventual role of this new technology and the treatment of GI cancer is yet to be defined. The cost of purchase for a laser system is between $70,000 and $100,000.

Training in Therapeutic Endoscopy

Diagnostic and therapeutic endoscopic procedures should be performed only by physicians who have undergone appropriate training and who utilize their skills regularly. These are not procedures for the uninitiated or occasional operator. The accuracy and incidence of complications of diagnostic endoscopy are directly related to factors including the endoscopist's training setting, number of procedures

performed during training and practice and continuing education. Therapeutic interventions are more difficult and riskier than diagnostic procedures and therefore the potential hazards of inexperience are proportionately greater. The American Society for Gastrointestinal Endoscopy has established guidelines for the training and the practice of gastrointestinal endoscopy.[24, 25] These guidelines have been approved by the American Gastroenterological Association, American College of Gastroenterology, and the Society for Surgery of the Alimentary Tract.

Conclusion

Therapeutic endoscopy is an emerging modality that is providing safe and cost-effective alternatives to traditional surgical approaches to a variety of GI problems. As Soergel and Hogan have recently pointed out, the enthusiasm for the use of these procedures must be balanced by a critical assessment of their benefit-risk ratio, by insistence on adequate training, and by considerations of cost to the individual and to the health care system.[1]

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Council Meeting Highlights

The Council of the South Dakota State Medical Association met on Friday, April 12, 1985, in Sioux Falls, South Dakota. Following are items of business transacted at this meeting.

1. DOCTOR FOR A DAY. A Doctor for a Day program will be implemented for the 1986 legislative session. Volunteer physicians from throughout the state will spend one day in Pierre through the legislative session providing medical care to legislators and becoming familiar with the legislative process and people involved.
2. PUBLIC RELATIONS PROGRAM. The Council approved a public relations program including the use of public service announcements, brochures and posters, and special events and contacts with media personnel and legislators.
3. AMERICAN FAMILY INSURANCE. The Council authorized the Executive Commission to review problems which have occurred relative to American Family Insurance and to decide whether or not the Association should take legal recourse to resolve these problems. The major area of concern is American Family's interference with the physician/patient relationship as demonstrated in correspondence from American Family to their insureds.
4. HMO — A report and background material on the concept of a state-wide HMO was considered. The Council directed that further information be prepared and presented to the Council at the time of the annual meeting.
5. BROOKINGS MENTAL HEALTH CENTER. The Association is requesting that the Board of Charities and Corrections evaluate the Brookings Mental Health Center.
6. HONORARY LIFE MEMBERSHIP. John Elston, M.D., Rapid City; E. A. Johnson, M.D., Milbank; Gordon Owen, M.D., Rapid City; and Donald Scheller, M.D., Arlington, were elected to honorary life member status in the State Medical Association.
7. ENDOWMENT BOARD OF DIRECTORS. Joseph Hamm, M.D., Warren Jones, M.D., Bruce Lushbough, M.D., Gerald Tracy, M.D., T. H. Sattler, M.D., Robert Giebink, M.D. and Bruce Allen, M.D. were re-elected to serve a one year term on the Board of Directors of the South Dakota Medical School Endowment Association.
8. SODAPAC BOARD OF DIRECTORS. Mrs. Cathy Calhoon and R. G. Belatti, M.D. were elected to three year terms on the SoDaPAC Board of Directors.
9. PROFESSIONAL LIABILITY INSURANCE. Minnesota Medical Insurance Exchange is now offering professional liability insurance in South Dakota. Glacier Insurance Company has gone into receivership leaving about 25 doctors in South Dakota with questions about their insurance coverage. The Council directed the executive secretary to contact other insurance carriers to see if they would offer prior acts coverage to those doctors.

■

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FACTS ABOUT THE SPECIALTY OF FAMILY PRACTICE

The specialty of family practice was officially recognized February 8, 1969, when the American Board of Medical Specialties and the Council on Medical Education of the American Medical Association approved a primary certifying board in the specialty. The application for a certifying board was submitted by the then American Academy of General Practice (now the American Academy of Family Physicians) and the Section on General Practice of the AMA.

Family practice is the continuing and current expression of the historical medical practitioner and is uniquely defined within the family context.

Family practice is comprehensive medical care with particular emphasis on the family unit, in which the physician's continuing responsibility for health care is not limited by the patient's age or sex nor by a particular organ system or disease entity.

Family practice is the specialty in breadth which integrates biomedical, behavioral, and social sciences. The core of knowledge and procedural skills encompassed by the discipline of family medicine prepares the family physician for a unique role in patient care, including the use of cognitive and procedural skills in diagnosis and management, and as a personal physician who provides and coordinates health care.

The American Board of Family Practice (ABFP) is a free-standing organization whose purpose, as with all other medical specialty boards, is to conduct examinations to measure competence in a special field of medicine (family practice) and to grant certification on the basis of performance in these examinations. Its membership consists solely of its officers and board of directors. Physicians whom it certifies are called diplomates. The structural organization of the new ABFP took shape June 22, 1969, following approval the previous February of a primary certifying board in family practice by the American Board of Medical Specialties.

The American Board of Family Practice conducts examinations and grants certification to family physicians who meet its qualifications and pass the examination. Fifteen examinations have been held. More than 29,000 diplomates have been certified.

The ABFP also requires recertification by examination every six years, the first certifying board to do so. Recertification examinations have been held annually since the fall of 1976. The ABFP is independent of the Academy. AAFP members do not have to take the board examination to remain Academy members, nor is board certification a requirement for AAFP membership.

The specialist in family practice is an examination-certified family physician who:

(1) Serves the public as the physician of first contact and means of entry into the health care system;
(2) Evaluates his patients' total health needs, provides personal medical care within one or more fields of medicine, and refers patients when indicated to appropriate sources of care while preserving the continuity of his own care;
(3) Assumes responsibilities for his patients' comprehensive and continuous health care and acts as a coordinator of his patients' health services, and
(4) Accepts responsibilities for his patients' health care, including the use of consultants, within the context of their environment — the family or comparable social units and the community.

The application for establishment of a certifying board incorporated a set of "Essentials for Residency Training in Family Practice" approved by the AMA's Council on Medical Education and House of Delegates and the Academy's Congress of Delegates. The Residency Review Committee for Family Practice reviews and accredits family practice residency programs under authority delegated to it by the Accreditation Council for Graduate Medical Education. The Accreditation Council is the policy making and appeal body in graduate medical education.

In July 1984, there were more than 7,400 residents in training in 384 approved programs. More than 17,000 physicians have been graduated from three-year family practice residencies.

Julie Yaroch Baustian Honored

Julie, shown with SDAFP Secretary-Treasurer, Loren H. Amundson, M.D., was recently honored by SDAFP. She has provided part time secretarial services for the Academy for 10 years, working in her free time while Administrative Secretary for the Department of Family Medicine, University of South Dakota School of Medicine.

She was recognized for her valuable contributions of time, effort and service, and received a certificate and honorarium. She retired from her secretarial position upon the birth of their third child. Julie and her husband, Jerry Baustian and their family farm northeast of Sioux Falls. We wish Julie well as she assumes the role of fulltime mother.

Mavis M. Amundson, wife of Dr. Amundson, has been retained as part time office secretary for the Academy, working out of the Academy office long established in their home at 3001 S. Holly, Sioux Falls, 57105.

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SPECIAL DELIVERY FROM THE WHITE HOUSE WASHINGTON DC

The following has been kept "top secret" since it was received four months ago; however, it was made "public" to the auxiliary during the Installation Luncheon on Saturday, June 8th.

Needless to say, it was **the** "high-lite" of the convention, along with receiving congratulatory comments from Representative Tom Daschel and Senators Jim Abdnor and Larry Pressler.

THE WHITE HOUSE
WASHINGTON

February 28, 1985

It gives me pleasure to send greetings to the members of the South Dakota State Medical Association Auxiliary as you celebrate your 75th anniversary.

From your modest beginning with 18 physicians' wives in 1910, the South Dakota State Medical Auxiliary has grown to a membership of 425. Through the years, your organization has not only increased in size but has also embraced many worthy projects important to the future of quality health care in South Dakota.

Nancy and I send our congratulations to everyone involved in the work of the "oldest, continuous Medical Auxiliary" in the United States -- along with our best wishes for many more years of successful and valuable service.

Ronald Reagan

Mary Wrage

Mary Wrage, Immediate Past President
South Dakota State Medical Association Auxiliary

About Our New President

RICHARD G. GERE, M.D., was born in Aberdeen, South Dakota, January 7, 1928, and moved to Mitchell where he grew up. After graduating from high school, he spent three years in the U.S. Army, one year of which he was stationed in Japan.

Dr. Gere then returned to South Dakota and received his Bachelor of Science degree in medicine from the University of South Dakota in 1953 and his medical degree from the University of Nebraska in 1955. He completed his internship at the Mercy Hospital, Des Moines, Iowa.

He practiced medicine for one year in South Sioux City, Nebraska before returning to Mitchell in 1957 to set up his general practice. He is on the staffs of both Methodist and St. Joseph Hospitals.

Dr. Gere and his wife of 36 years, Marge, have four children: Mrs. Georgeann Wamboldt, Cheyenne, Wyoming; Gina, Casper, Wyoming; Gretchen, Mitchell, South Dakota; and Gregory, New Orleans, Louisiana.

Dr. Gere's interests, besides his family and his practice, are golfing, hunting (especially waterfowl), and fishing.

South Dakota Society Of Pathologists

Officers for 1983-84

Jerry L. Simmons, M.D., President
John F. Barlow, M.D., Vice President
Beth L. Johnson, M.D., Secretary-Treasurer

First of all, I would like to take this opportunity to express my gratitude to all the members of the South Dakota State Medical Association for granting me the privilege of serving as their president for the coming year. Hopefully, I can serve them as well as my predecessors have.

In this day of DRG's, DNR, HMO's, physicians' payment freeze, and the problems of increasing malpractice claims, it is apparent that the profession will be busy trying to insure adequate patient care and satisfactory physician-patient relationship. We will all have to continue to be active, or become active, in order to remain a positive and dominant force in the medical care of this state and country.

R. G. Gere, M.D.

R. G. Gere, M.D., President
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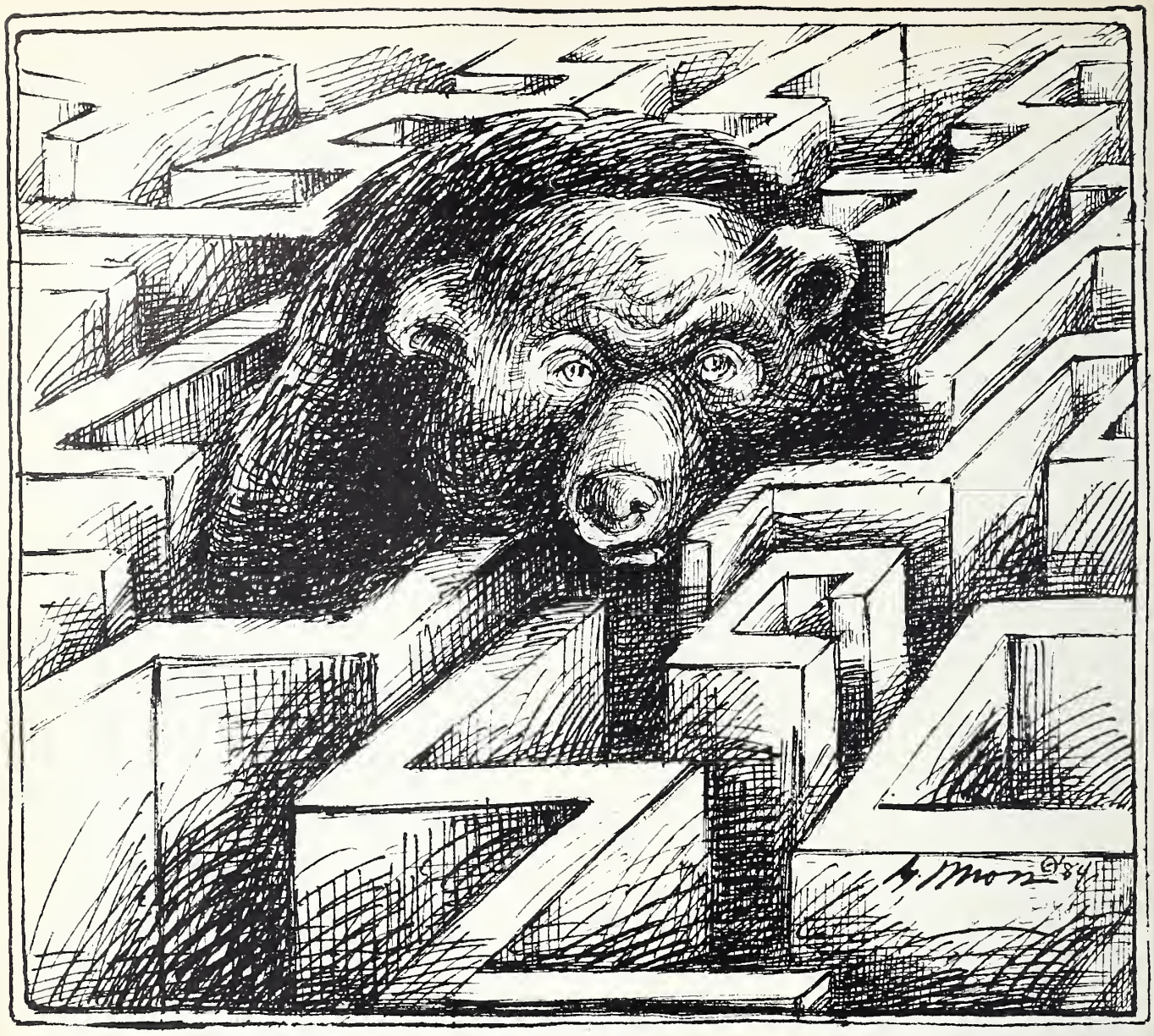

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—*Letter From the Editor*——

In Appreciation of Dr. John Barlow

When Dr. Karl Wegner invited Dr. John Barlow to join him at the Laboratory of Clinical Medicine in 1963, he brought to South Dakota an excellent pathologist, a hard worker, and a real student of medicine. John, a graduate of Harvard Medical School and the residency program at Massachusetts General Hospital, brought with him the ideals of his New England training, including his love for the *New England Journal of Medicine* and its featured Clinicopathological Conferences.

The formation of the Clinicopathological Conferences, edited by John in the *South Dakota Journal of Medicine,* evolved from this background. Established in 1966, a total of 174 conferences have appeared. The May issue concluded this series.

These Clinicopathological Conferences have played a significant role in the intellectual improvement of the many participants, including the staff, residents and medical students as well as the readers of our *Journal.*

John has devoted nineteen years of his life to this project. We express to him our sincere appreciation for his excellent contribution. In addition to expressing our deep thanks, we wish him well in his new location and hope he will enjoy it as much as we have enjoyed him and his many outstanding efforts.

Robert Van Demark, M.D., Editor

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Nontraumatic Metastatic Clostridial Myonecrosis in a Patient With Preleukemia*

Kevin Vaska, M.D.†
Jerry Simmons, M.D.‡

ABSTRACT

Clostridium septicum infections are rare; however, they may be a marker of underlying hematologic or gastrointestinal malignancy, and may antedate the cancer diagnosis. A high index of suspicion, and aggressive management based on clinical impression may be the patient's only chance of survival.

A 57 year old man with preleukemia presented with gastroenteritis-like symptoms, and leg pain. The course was fulminant, marked by excruciating pain, nonspecific physical findings, eventual toxemia, and late soft tissue gas. Death ensued within 36 hours despite appropriate aggressive therapy.

Introduction

The unique association of Clostridium septicum infection and neoplasia, especially of gastrointestinal and hematologic origin may be overlooked due to its infrequent and misleading presentation.[1] A history of carcinoma, combined with a finite group of signs and symptoms, often nonspecific, may be the only clue to this rapidly fatal illness. Few diagnostic or therapeutic advances have occurred since the early 1960's. Survival can occur, with a high index of suspicion by the physician and aggressive management.[2]

We present a 57 year old man with preleukemia; hospitalized for gastroenteritis-like symptoms, and leg pain, who expired rapidly in spite of aggressive therapy.

Case Report

A 57 year old male presented to the Royal C. Johnson Veterans Administration Hospital at 11:30 p.m. with a 12-hour history of explosive watery diarrhea, fever of 102°F., nausea, vomiting, abdominal cramps, rigors with alternating sweats and chills, and marked apprehension. There had been concurrent onset of a mild inner right thigh pain. Medications on admission consisted of prednisone 40 mg. daily, and oxygen.

The patient had a diagnosis of preleukemic, with anemia, thrombocytopenia, and hypercellular bone marrow made four months earlier. He had been hospitalized one month previously for hypovolemic shock, secondary to diarrhea of unknown etiology. The past medical history also included severe chronic airflow limitation secondary to emphysema, desquamative interstitial pneumonitis, and a polyclonal gammopathy.

On admission the patient was acutely ill with tremulousness, diaphoresis, and anxiety. He was alert and had difficulty with abdominal cramps. Blood pressure was 70/20 mm Hg, with marked orthostatic changes; pulse was 126, regular. Respirations were 40 and mildly labored; temperature 101°F. He had dry mucous membranes, poor tissue turgor, and warm, moist skin. Pulmonary and cardiovascular examinations revealed only thready peripheral pulses and nondistensible jugular venous

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* Presented before the South Dakota Chapter, American College of Physicians Annual Meeting at Sylvan Lake, SD, September 14, 1984.

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pulses. Bowel sounds were diminished, with generalized abdominal tenderness; no guarding or organomegaly. The rectal exam revealed minimal guaiac negative stool. There was mild tenderness over the right thigh and distal iliofemoral groove, without asymmetrical circumferences, warmth, discoloration, or crepitation.

White blood cell count was 37,000/mm^3, with 26% neutrophils, 25% band forms, 44% monocytes, and 5% lymphocytes. Hemoglobin, 9.1 g/dl (14 to 18); hematocrit was 30 percent (42 to 52), and platelets — 23,000/mm^3 (150,000 to 400,000). Serum sodium was 131 meq/liter (136 to 148), potassium — 4.4 meq/liter (3.6 to 5.2), chloride — 99 meq/liter (95 to 110), and bicarbonate 18.4 mM/liter (24 to 31). Arterial blood gas showed a pH of 7.41 (7.35 to 7.45), pCO_2 27 (35 to 45), bicarbonate — 17 (23 to 29), pO_2 — 54 (80 to 90), and O_2 saturation — 86% (85 to 98) on 2 liters oxygen; with a shunt pattern of hypoxemia. Urinalysis, serum amylase, and liver functions were unremarkable.

Chest x-ray showed pleural changes in the left lung base, unchanged from previous films. Abdominal films showed distended small bowel loops.

The patient was admitted to the Intensive Care Unit for rehydration, complete cultures of all sites, heparinization, bowel rest (with nasogastric suction) and antibiotic coverage with Cefazolin. The tentative problem list included: a) hypovolemic shock, b) shunt hypoxemia due to pulmonary embolus secondary to probable right leg deep venous thrombosis, and c) immunosuppression secondary to preleukemia and prednisone, and d) nonspecific gastroenteritis.

Within four hours the patient's right thigh pain markedly increased; an immediate venogram was requested. This showed increased venous pressure, complete occlusion of the deep venous system above the popliteal vein, and extensive soft tissue gas in the right leg and pelvis, along the femoral sheath (Fig. 1). Reevaluation of the area revealed purple discoloration, exquisite pain, and crepitance (Fig. 2).

The patient's temperature remained at 101°F, pulse 160, blood pressure 100/50 mm Hg; he was markedly apprehensive. Repeat white blood cell count was 93,000/mm^3 with 7% neutrophils, 31% band forms, 43% monocytes, 11% lymphocytes, and 8% immature forms. In consideration of gas gangrene, broad spectrum antibiotic coverage was instituted: aqueous penicillin-G 6 million units IV — every 6 hours, chloramphenicol 1 gram IV — every 6 hours, Tobramycin 70 milligrams IV — every 8 hours (120 milligram loading dose), and Ticarcillin 3 grams IV — every 4 hours.

Swan-Ganz catheter showed vasodilatation and reduced transpulmonary pressures. At surgery, less

Figure 1
Soft tissue gas along right femoral sheath (arrow).

Figure 2
Skin discoloration, affected thigh.

than twelve hours after admission, bloated, necrotic muscle was found. Gram stain of the biopsy revealed clostridia with an absence of inflammatory infiltrate (Fig. 3). A right hip disarticulation and left leg fasciotomy were done. The patient was transferred by air ambulance to the Hennepin County Hyperbaric Oxygen Unit. In spite of two such treatments at 3 atmospheres pressure, further surgical debridement, pressor agents, and volume replacement including 55 units of packed red blood cells, he expired in shock, complicated by disseminated intravascular coagulation 36 hours after first presentation.

Autopsy revealed extensive soft tissue gas; and necrotizing enterocolitis of the cecum. Blood cultures, reported after death, showed clostridium septicum.

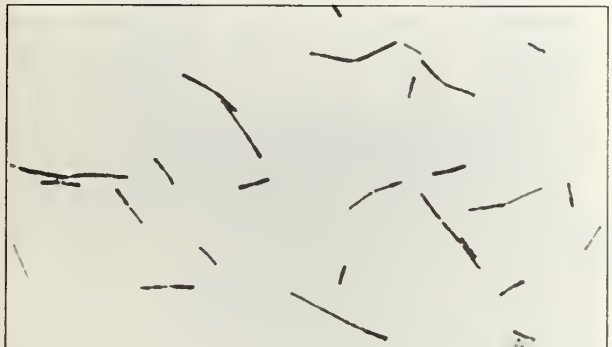

Figure 3
Gram stain of biopsy material showing Clostridia.

Discussion

Clostridium septicum, a ubiquitous anaerobic gram-positive bacillus identified by Pasteur in 1877, has a unique association with neoplasia; described in 1946 by Govan in the **Journal of Pathologic Bacteriology.**[3] It represents 20% of a spectrum of six histotoxic Clostridia causing gas gangrene.[4] An opportunist of vegetative and spore forms with little invasive power but marked swarming ability, it causes septicemia and myonecrosis locally and/or embolically, when in presence of a break in the gastrointestinal mucosa, secondary to tumor infiltrates or ulceration from immunosuppression. The environment of the ileocecal region is appropriate for such a breach.[5] Though not a normal inhabitant of the gastrointestinal tract, this organism may present as a visceral necrotizing enterocolitis and/or a rare metastatic myonecrosis.[6] Given an immunocompromised host, unable to cope with transient bacteremia, the organism settles in areas of ischemia and hypoxia as the vegetative form. It elaborates toxins such as alpha lecithinase that overwhelm local host defenses, and lead to a vicious cycle of tissue destruction, further ischemia, and bacterial proliferation with toxin production.[7] Gas and fluid accumulate in muscle causing necrosis, vessel compression, lactic acidosis, and decreased oxidation-reduction potential — the so called "intratumoral milieu," described in 1955 by Malmgren in **Cancer Research.**[8] Overlying connective tissue and skin are spared.

The first reports of a series of Clostridium septicum infection by Alpern et al. from the Center for Disease Control in 1969[9] and by Koransky et al. in 1979[10] consisted of 86 patients, and showed a 76% incidence of documented neoplasia (Fig. 4). The only single institution series reported 7 patients, all of whom had a 100% incidence of neoplasia. The 51 other reported cases revealed a 61% incidence of malignancy. Of 144 cases in the English literature, 72% had a concomitant neoplasm, roughly split between hematologic and gastrointestinal lesions.

C SEPTICUM SEPTICEMIA WITH MALIGNANCY

	#	%CA	Hem%	GI%	Other%
Alpern/Koransky	86	76	54	29	17
Single Institution	7	100	29	57	14
Others	51	61	39	58	3
	144	72	48	40	12

(Pelfrey-1984 Arch Surg)

Figure 4
Reported series of Clostridial septicemia in malignancy.

Those at risk for Clostridium septicum infection tend to be patients with gastrointestinal or hematologic cancer, whose infection may antedate the cancer diagnosis. When infection with Clostridium septicum develops, in the absence of a grossly contaminated, deep traumatic wound, the likelihood is great that the patient has associated malignant disease, either occult or manifest.[9]

Metastatic gas gangrene should be suspect when a cancer patient presents with a change in vital status, especially with the signs and symptoms noted by Jenckejewski et al.[11] (Fig. 5), and as seen in our patient. When local signs become evident, there is swelling and crepitation of muscle with brawny induration, and bronze color of the skin, with bullae containing clear, malodorous fluid. Direct smear may be helpful, if not diagnostic. Bacteriologic data may take more time than the evolution of the illness. Gram stain does show the absence of an inflammatory reaction. Of major importance is the short incubation period, explosive onset, tachycardia disproportionate to fever, and marked toxemia, with

SYMPTOMS & SIGNS OF CLOSTRIDIAL MYONECROSIS

1) Early heaviness of involved part
2) Sudden severe pain out of proportion to PE
3) Dissociation of Pulse & Temperature
4) Fever absent or low grade
5) Marked anxiety, apprehension
6) Hypotension rare until end stage
7) Crepitation late or absent
8) Late brawny edema & bronze color

(Jenckijewski-1978 AJM)

Figure 5
Findings associated with Clostridial invasion of muscle.

death in hours.

In spite of the unfamiliar presentation, infrequency, and complex differential gas-producing infections,[12] management must be aggressive and based on clinical impression.[8]

Penicillin is the drug of choice, with cefazolin and other first generation cephalosporins, metronidazole, and chloramphenicol as alternatives. All survivors have been given antibiotics,[9] but only an adjunct to surgical fasciotomy, excision, or amputation as primary treatment as early as possible.[13] Clostridia antitoxin has been ineffective; there is no active immunization. Brummelkamp in 1961 described use of hyperbaric oxygen to decrease bacterial proliferation and toxin production, especially preoperatively. It does not neutralize toxin already present. Vasoconstrictors are contraindicated, since they may further decrease perfusion pressure to the infected area, aggrevating ischemia. Overall, survival remains 36%, given immediate, intensive therapy.[14]

Summary

This patient illustrates the urgency of treatment of Clostridium septicum infection; and the infection's close association with carcinoma. For any patient with a gastrointestinal or hematologic neoplasm, in whom an unexplained painful extremity suddenly develops, the possibility of this entity should be considered.[15] A high index of suspicion is the only weapon against nontraumatic, metastatic Clostridial Myonecrosis.

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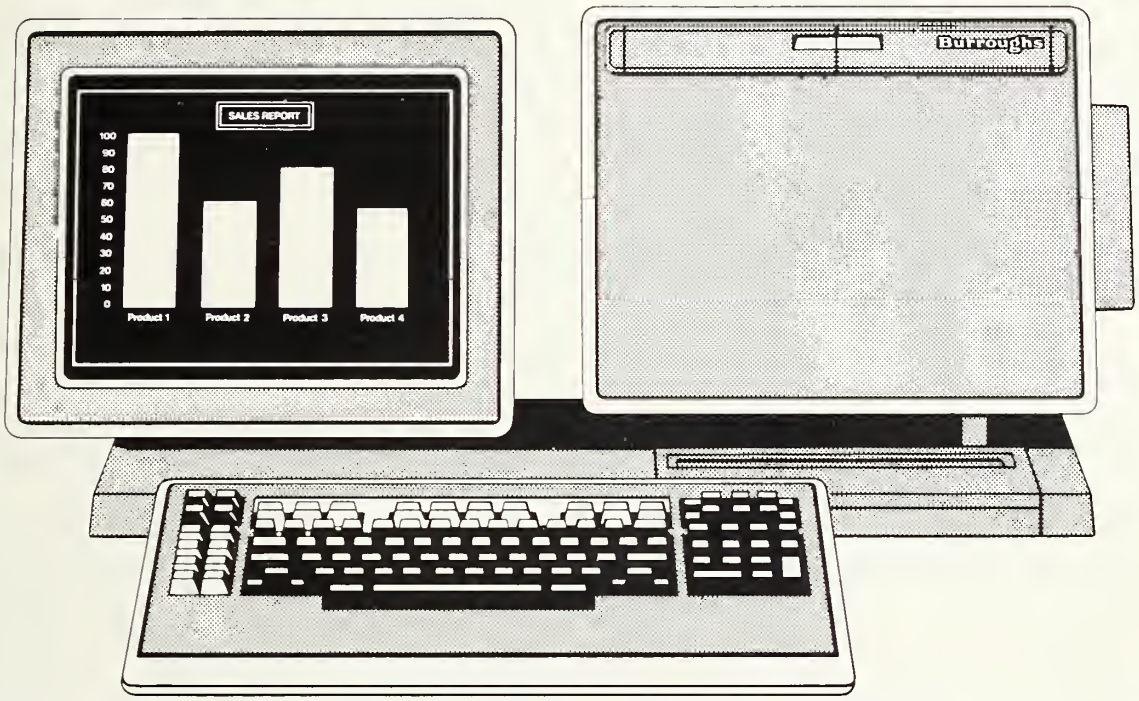

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Cardiac Morphology: Angiographic, Auscultatory, Echocardiographic and Electrocardiographic Correlations, Hyatt Lake Tahoe, Incline Village, NV, July 1-3. Fee: $340 mem.; $400 nonmem. 19 hrs. AMA Category I credits. Contact: ACC, Extramural Prog. Dept., 9111 Old Georgetown Rd., Bethesda, MD 20814. Phone: (301) 897-5400, ext. 230.

Orthopaedic Surgery: Spine, Hyatt Regency Hotel, Minneapolis, MN, July 10-13. Fee: $350. 24.5 hrs. AMA Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Human Aging, Willey Hall, U. of Minn., Minneapolis, MN, July 17-18. AMA Category I credit hrs. available. Contact: CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Minnesota Symposium on Nuclear Medicine, Radisson Univ. Hotel, Minneapolis, MN, July 25-27. AMA Category I credits available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Interventional Radiology, Malcolm Moos Health Sci. Tower, U. of Minn., Minneapolis, MN, July 25-27. AMA Category I credits available. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

August

Practical Approaches to Managing Trauma, Fox Hills Resort, Mishicot, WI, Aug. 1-3. CME credits available. Contact: CME, St. Paul Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

16th Annual Black Hills Summer Seminar, Howard Johnson Motor Ldg., Rapid City, SD, Aug. 8-10. Fee: $100. 16 hrs. AMA Category I credits. Contact: Black Hills Summer Seminar, 3001 S. Holly Ave., Sioux Falls, SD 57105. Phone: (605) 335-5008 or 338-3571.

Antibiotics Update: Carbapenems, Alameda Plaza Hotel, Kansas City, MO, Aug. 14. CME credits available. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Pediatric Brain Tumors, Radisson Univ. Hotel, Minneapolis, MN, Aug. 21-23. Fee: $250. 16 hrs. Category I credits. Contact: CME, Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

September

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Annual Meeting of the American College of Physicians/ South Dakota Society of Internal Medicine, Pierre, SD, Sept. 6-7. Contact: Wm. Taylor, M.D., SD ACP Governor, 201 S. Lloyd St., Aberdeen, SD 57401. Phone: (605) 225-8800.

Heart and Mind: Neurocardiology Update, Hyatt Regency Hotel, Kansas City, MO, Sept. 7. CME credits available. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr. 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Cardiology Tutorial in the Wilderness, Colorado, Sept. 7-14. Fee: $395. 24 hrs. AMA Category I credits. Contact: Off. of CME, UC San Diego School of Med., M-017, La Jolla, CA 92093. Phone: (619) 452-3940.

Annual Surgery Symposium, Hyatt Regency Hotel, Kansas City, MO, Sept. 12-13. CME credits available. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 77103. Phone: (913) 588-4480.

Special Workshop on the Use of the CO_2 Laser in ENT Surgery, U. of Kansas Med. Ctr., Kansas City, KS, Sept. 19-20. Fee: $625. 14 hrs. AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Pulmonary & TB Update, Radisson Plaza Hotel, St. Paul, MN, Sept. 19-21. CME credits available. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Advanced Cardiac Life Support Provider Course, U. of Kansas Med. Ctr., Kansas City, KS, Sept. 25-26. 13.5 hrs. AMA Category I & AAFP credits. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone (913) 588-4480.

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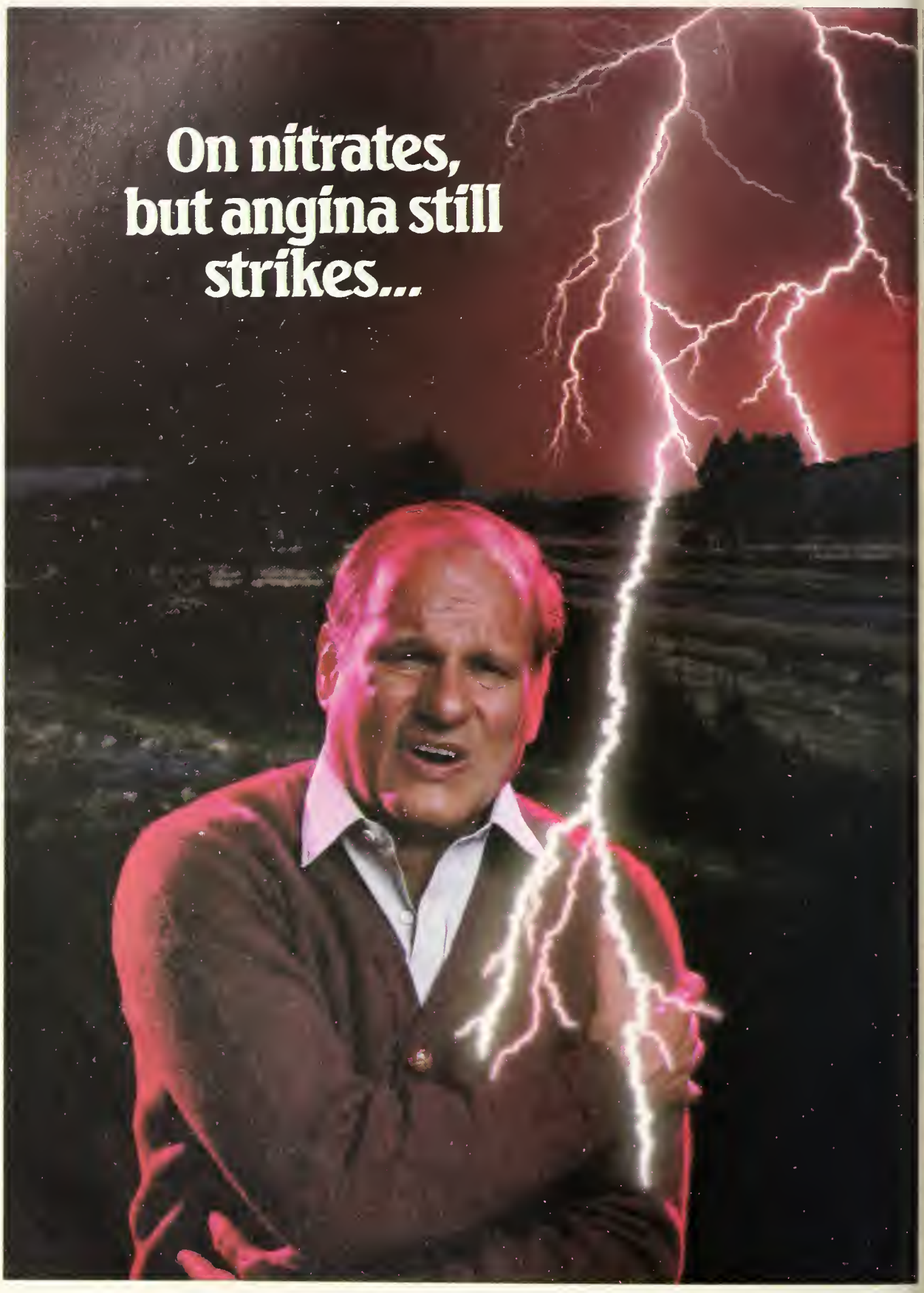
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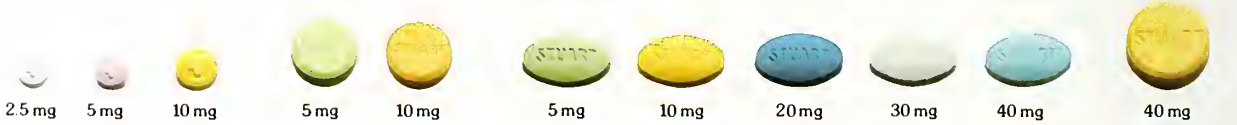

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The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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The Prevalence of Respiratory Symptoms Among Farmers and Ranchers in Southeastern South Dakota*

† Evelyn H. Schlenker, Ph.D.
‡ Gary R. Leonardson, Ph.D.
§ Craig McClain, MPA
‖ Eric Barnes
Rodney R. Parry, M.D.

ABSTRACT

A standardized American Thoracic Society questionnaire[7] with additional questions related to respiratory symptoms associated with the raising of crops and animals was sent to 400 farm owners in southeastern South Dakota. The results, based upon 176 respondents, indicated a high prevalence of symptomology related to raising crops and animals. As expected, smokers reported the greatest number of symptoms associated with or without farming. Runny eyes, runny nose, and cough were mostly reported in conjunction with crop production and cough was reported with animal raising. Symptoms related to crop raising were most prevalent in the summer and fall; those related to animal raising were prevalent equally throughout the year. Of all animals, hogs and feeder pigs were most responsible for animal-related symptoms. There was no difference in the prevalence of symptoms in confinement operators vs non-confinement operators. Although masks were worn by about 50% of the respondents, only 5 individuals reported using them in the hog house.

INTRODUCTION

The health hazards associated with farming include accidents, exposure to toxic gases and dusts in silos and confinement housing, and exposure to bacterial endotoxins, herbicides and pesticides, to name a few.[2-4, 6, 10, 15, 17] Respiratory diseases found in farmers include occupational asthma related to animal and grain handling;[1, 5, 8, 9, 11] Silo Filler's Disease, which occurs from inhalation of toxic oxides of nitrogen,[17] and Farmer's Lung, a hypersensitivity pneumonitis associated with moldy vegetable matter containing thermophilic actinomycetes.[12, 14] Some of these diseases can cause death acutely, as with Silo Filler's Disease, or with high levels of hydrogen sulfide from manure.[4, 6] Other diseases, such as occupational asthma, are more chronic and add more to morbidity than to mortality.

In addition to these relatively well known disease entities, sub-clinical influenza-like or bronchitis-like symptoms may be intermittently debilitating.[5, 13, 17] Further complicating the diseases and symptoms may be cigarette smoking, and climatic factors which may act in an additive or syner-

* This work was supported in part by a University of South Dakota mini-grant, No. 202-4680.
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gistic manner to exacerbate symptoms/findings.

Because surveys of the prevalence of respiratory disease among South Dakota farmers and ranchers have not been previously documented, this pilot study was conducted in southeastern South Dakota.

METHODS

Questionnaires and Subjects

American Thoracic Society standardized questionnaires,[7] including questions specifically related to raising crops and animals, were sent to 400 farm owners in Clay County, South Dakota. Questions related to the use of masks, confinement housing and use of pesticides and herbicides were also included. Data was analyzed using nonparametric tests such as X^2 test and G test as well as the Students t test. Significance was accepted at $P \leq 0.05$.

One hundred seventy-six individuals responded. Of these, 153 were born in South Dakota. Eight were women. The mean age of the group was 48.4 years; length of time worked on a farm or ranch was 33.4 years.

RESULTS

To evaluate the effect of smoking status on symptomology, respondents were separated into 3 groups (Table I) — current smokers (9%), ex-smokers (35%) and lifetime non-smokers (56%). The mean age of smokers vs non-smokers was not significantly different, whereas ex-smokers were older ($P < 0.001$).

Table I
AGE OF SUBJECTS ACCORDING TO SMOKING CLASSIFICATION

	Age
Smokers	43.3 ± 11.4 (N = 17) (27-65)
Ex-Smokers	*52.9 ± 12.0 (N = 61) (28-73)
Non-Smokers	46.5 ± 13.3 (N = 98) (20-86)
All Groups	48.4 = 12.7 (N = 176) (20-86)

* The age of the ex-smokers is significantly greater than that of smokers and non-smokers ($P < 0.01$).
Values in parenthesis represent the range of age in each category. $\bar{X} \pm SD$.

Non farm-related symptoms; those not associated directly with raising crops (hay, oats, alfalfa, soybeans, corn) and/or animals (dairy cattle, hogs, feeder pigs, beef cattle, etc.), were acknowledged by 71% of the smokers, 30% of the non-smokers, and 34% of the ex-smokers. These data are presented in Table II.

Symptomology related specifically to farming increased significantly ($P < 0.01$) in the number of farmers reporting who were non-smokers, from 30 to 55%. Symptoms included cough, shortness of breath, headache, fever, and "whistling" in chest related to raising of crops and/or animals. Ex-smokers showed an increase of symptomology from 34 to 64% ($P < 0.01$) whereas 71% of smokers reported symptoms related to farming (Table II). When the prevalence of symptoms was evaluated individually, non-smokers and ex-smokers displayed a less chronic cough, phlegm, cough and phlegm, and wheezing than did smokers (Table III). Significant differences between the prevalence of symptoms related to farming were shortness of breath, headache, "whistling" chest and runny eyes related to crop raising in smokers and non-smokers. Ex-smokers showed an increased prevalence of shortness of breath related to crop raising, compared to non-smokers.

Table II
SMOKERS, NON-SMOKERS AND EX-SMOKERS REPORTING NON-FARMING SYMPTOMS COMPARED TO FARMING SYMPTOMS

Non-Farming	Farming
Smokers 12/17 (71%)	12/17 (71%)
Non-Smokers 29/98 (30%)	54/96 (55%)
Ex-Smokers 21/61 (34%)	39/61 (64%)

Only 4.5% of respondents suffered from confirmed asthma, 18% from chronic bronchitis, 2.8% from emphysema, and 11.4% from hay fever.

Those farmers with symptoms related to raising crops reported primarily runny eyes, cough and runny eyes, occurring during the summer (28%) and fall (31%) (Table IV). The most consistently related symptom associated with raising animals was cough (31%) (Table IV). Forty-three percent of respondents indicated that those symptoms related to animal raising were equally bad all year, whereas 17.8% indicated summer and 14.4% indicated winter as "problem" seasons.

Of the 138 farmers who raised hogs, 64 claimed that these animals were responsible for the symptoms (Table V). Of the 29 farmers who raised feeder pigs, 34% claimed that these animals were responsible for their symptoms. Only 4 of the 127 farmers who raised beef cattle reported these animals were responsible for their symptoms.

In Table VI the prevalence of symptoms of farmers who did not raise hogs and/or feeder pigs, and those that raised hogs are compared. There was no difference between the two groups in non-farm related symptoms, but animal related symptoms were markedly less in non-hog farmers than in the hog

Table III
PERCENT OF SMOKERS, EX-SMOKERS AND NON-SMOKERS REPORTING SYMPTOMS

	Chronic Cough	Phlegm	Cough & Phlegm	Wheezing During a Cold		Runny Nose	Shortness of Breath	Headache	Cough	Whistling in Chest	Runny Eyes	Fever
	Non-Farm Symptoms					Farming Symptoms						
Non-Smokers	a 9.2	a 16.3	a 8.2	a 21.4	A	12.2	5.1	5.1	30.6	5.1	8.2	
N = 98					C	29.6	8.2	13.3	20.4	5.1	17.3	5.1
Ex-Smokers	a 9.8	a 18	a 9.8	a 34.4	A	19.7	18	14.8	32.8	14.8	14.8	
N = 61					C	31.1	b 23	19.7	31.1	13	24.5	3.3
Smokers	47	58.8	35	82.3	A	17.6	11.7	11.7	23.5	11.7	5.9	
N = 17					C	47	a 41	a 35	41	a 29	a 47	11.7

A—refers to symptoms associated with raising animals.
C—refers to symptoms associated with raising crops.
a—percent is significantly ($P < 0.05$) different from that of the smokers' corresponding value
b—percent is significantly ($P < 0.02$) different from the non-smokers' corresponding value

Table IV
SYMPTOMS RELATED TO RAISING CROPS AND TO RAISING ANIMALS

Numbers	Percent	Symptom
A. Crop Symptoms		
57	32	Runny Nose
30	17	Shortness of Breath
31	18	Headache
46	26	Cough
19	11	Whistling Chest
40	23	Runny Eyes
9	5	Fever
B. Animal Symptoms		
29	17	Runny Nose
19	11	Shortness of Breath
18	10	Whistling Chest
14	9.7	Headache
54	31	Cough
20	11	Runny Eyes

Table V
ANIMALS WHICH CAUSED SYMPTOMOLOGY

	Number*	Percent
Dairy Cattle	0/47	0
Beef Cattle	4/127	3%
Sheep/Lamb	1/60	1.7%
Hogs	63/137	46%
Feeder Pigs	27/79	34%
Chickens	14/74	19%

* Number refers to the number of individuals who had symptoms who raised these animals.

farmers. The prevalence of symptoms specifically related to raising crops was not different between the two groups, except runny eyes ($P < 0.01$).

Confinement housing of hogs, feeder pigs and/or chickens was reported by 74 farmers. The proportion of farmers who reported symptoms associated with confinement housing (65%) was not different when compared to those who did not (54%).

Masks were used by almost half (82) of the respondents. Most farmers wore masks when cleaning grain bins, and when using herbicides and pesticides, which 153 farmers used. Few farmers[5] used masks in the hog house. Most masks were 3M paper or cloth "filter masks," although 5 farmers reported they used cannisters and dust respirators. Only 27 farmers used masks the entire time they were performing a task. Most individuals who did not use a mask felt that the mask was uncomfortable, not immediately available, or that they didn't need one.

DISCUSSION

This study, like those of Donham and co-workers in swine confinement workers[5] and Babbot, Jr., et al[1] in Vermont dairymen and industrial workers, shows an increased prevalence of symptomology in smokers vs ex- and/or non-smokers. In the present study, smokers also reported a higher percentage of symptoms related to raising crops, but not to raising

Table VI
PERCENT OF SMOKERS, EX-SMOKERS AND NON-SMOKERS REPORTING SYMPTOMS

	Chronic Cough	Phlegm	Cough and Phlegm	Wheezing During a Cold	Cold Goes To Chest	Runny Nose	Shortness of Breath	Whistling in Chest	Headache	Cough	Runny Eyes	Fever
	Non-Farm Symptoms					Farming Symptoms						
Non-Hog Farmers	5	13.5	8	21.6	27	A 2.7	5.14	0	2.7	0	0	
N = 38						C 16.2	13.5	8	10.8	24	16.2	5.4
Hog Farmers	13	21	11.5	36	29	A * 20	11.5	* 12.3	9	* 38.4	* 13.8	
N = 138						C * 36	18	11.5	19.6	26	24.6	4.3

A — refers to symptoms associated with raising animals.
C — refers to symptoms associated with raising crops.
* Indicates that the prevalence of the corresponding symptoms in hog farmers is significantly ($P < 0.01$) greater than in non-hog farmers.

animals. It would appear from the data in Table III that there is a gradual increase in the prevalence of symptomology related to raising crops when non-smokers, ex-smokers, and smokers are compared, which does not hold true for the animal-related symptomology. Warren[19] found a similar pattern in a study of cattle farmers in Manitoba.

Matson and co-workers,[13] in contrast to our findings, found a higher prevalence of symptomology related to confinement housing, in non-smokers than in ex-smokers. The present study goes further than others in that we attempt to distinguish symptomology related to the raising of crops from those related to raising animals. Respondents in the present study indicated that runny eyes, runny nose and cough were most often associated with raising crops, whereas non-smokers and ex-smokers reported cough as the most prevalent symptom. Bronchitis-like symptoms such as cough and phlegm production, were noted in studies of swine confinement workers, by Matson, et al[13] and by Donham, et al.[4]

Crop related symptoms and animal related symptoms appeared to have different seasonal variations. Crop related symptoms were reported to occur more frequently in summer and fall, whereas animal related symptoms were found by 43% of the respondents to occur equally all year. Similar crop related variations were found in a retrospective study of hospital visits related to farm-associated lung injury by Pratt and May.[17] In contrast to our findings for animal related symptomology, Matson, et al,[13] found that 44% of the hog farmers believed there was some seasonal variation in symptoms, but 73% of those workers noted increased symptoms during the winter months when Donham and co-workers[4, 6] found carbon monoxide, carbon dioxide, respirable particles and hydrogen sulfide levels to be high in confinement housing.

A number of factors in the present study suggest that hogs contribute greatly to the animal related symptomology reported. Hogs were raised by 78% of the participants. Of those farmers and/or ranchers who raised animals and reported symptoms, most associated those symptoms with feeder pigs and/or hogs. Also, of the individuals who raised animals in confinement houses, most had feeder pigs and/or hogs. Finally, hog farmers showed a significant increase in animal related symptoms. In contrast to other studies of hog farmers,[5, 11, 13] the prevalence of symptoms was not as high (Table VI). There was also no difference in the prevalence of symptomology of individuals who raised animals in confinement, compared to those who did not — a finding different from Donham and co-workers.[5] A factor contributing to this difference may have to do with the size of the confinement and/or hog farm operations in southeastern South Dakota, and those in Iowa. The average number of hogs raised by respondents in this study was 437 per year (ranging from 2 to 4000 hogs). Large confinement operations in Iowa may raise 1,500 market swine in a six-month period.[16]

Another item which may influence the quantity of respiratory symptoms was the use of masks. Although a relatively high percent of farmers (about 50%) claimed to have used masks, only 27 of the 176 respondents used masks all the time. Most masks were used appropriately when cleaning out grain bins and handling chemicals, but only 5 individuals used masks in the hog house. The conclusions from this and other studies indicate that hog exposure has a significant contribution to respiratory health; yet protective measures either have not been found, or have not been used by farmers to decrease exposure to these hazards. Many farmers don't even use masks. It is clear more studies and education in this area must be pursued to reduce the potential for increased respiratory morbidity associated with farming.

ACKNOWLEDGEMENT

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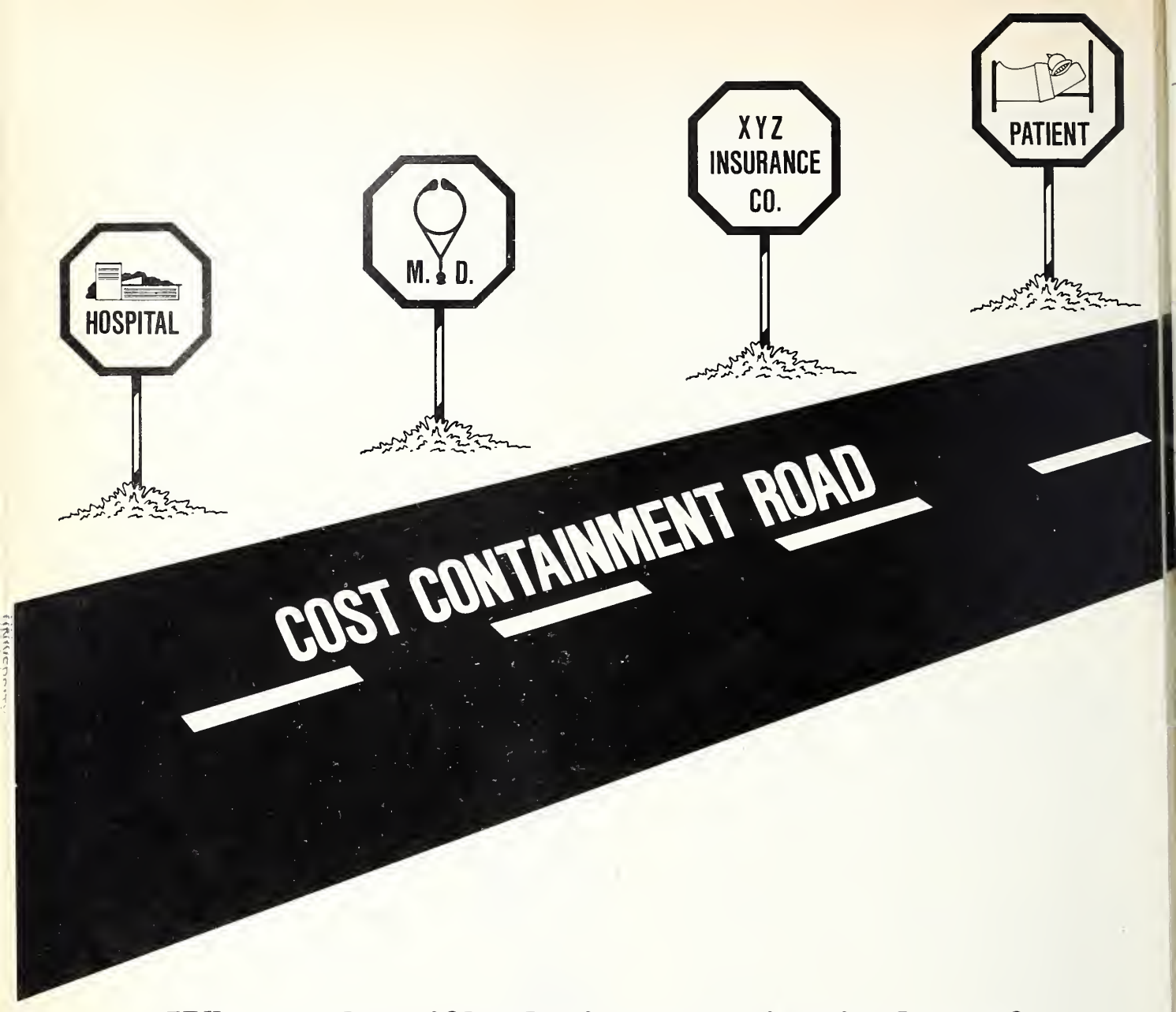

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Next we come to the Peer Review Committee. Let us not turn these into "Witch Hunts" just because of personality conflicts or because our ego makes us feel that perhaps we could have handled it in a more satisfactory manner.

I feel that physicians, for the most part, have always provided quality care to their patients in the past and will continue to do so in the future, in spite of attempts at regimenting care.

R. G. Gere, M.D.

R. G. Gere, M.D., President
South Dakota State Medical Association

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Our goal has always been to perform the peer review process with as little inconvenience to the attending physician as possible. If the documentation of the need for hospitalization or substantiation of diagnoses is adequate for our physician reviewers to make a determination, we can avoid bothering you at a later time for additional information not included in the record. Also, in these times of increasing litigation, we think it is wise for a physician to carefully and thoroughly document the care he provides to protect him in the event of litigation. We think you will agree with us that sufficient documentation is important to everyone.

A Clinic for Myelodysplasia/Congenital Hydrocephalus

Jessie K. M. Easton, M.D., M.P.H.*
K. Alan Kelts, M.D., P.L.B.†
Janet Nystrom, R.N., M.S.C.‡

Myelodysplasia is one of the most complex disorders of childhood. In addition to the central nervous system anomaly of the spinal cord with its accompanying hydrocephalus and Arnold Chiari malformation (in 85%), there are the effects on the musculoskeletal, renal and digestive systems to complicate the normal problems of growth and development.[1]

Optimal management requires attention from a variety of professional people assisting the child's parents to deal with a succession of problems, some major and life-threatening, some relatively minor. An integrated approach is essential. Each individual dealing with the family must consider the child's overall needs as they change with time and development, and consider also what effect a particular procedure will have on other aspects of the child's care.

In 1983 the South Dakota Department of Health, through the Children's Comprehensive Health Care Services (CCHCS), established a multi-disciplinary clinic[2] to provide guidance to primary physicians in managing children with myelodysplasia and congenital hydrocephalus.

The Myelodysplasia/Congenital Hydrocephalus (MD/CH) Clinic is held in Sioux Falls and Rapid City. Initially four clinics a year were scheduled at each site in 1983-84. The Sioux Falls MD/CH Clinic has had more demand and there are six clinics scheduled for 1984-85 at the Crippled Children's Hospital School/Sioux Valley Hospital Pediatric Clinic. Referrals to the Rapid City clinics have been fewer; there will be four sessions at the Midwest Children's Center/Black Hills Rehabilitation Hospital this year. Professionals working in each locale staff the clinics. Scheduling, record-keeping and correspondence, as well as follow-up and general problem-solving between clinics, is done by staff of the Sioux Falls and Rapid City CCHCS clinics. Other professionals who work in the clinic and contribute expertise and opinions may or may not provide definitive care outside the clinic. A child who lives in Sioux Falls may have most of the recommended procedures carried out by clinic doctors, while another who lives in Aberdeen or Milbank may have some special procedures done in Sioux Falls and the rest of his care provided by his pediatrician and other specialists in Aberdeen.

The clinic team consists of one or more Pediatricians, Neurologists, Orthopedists, Urologists, Physiatrists, Psychologists, Physical Therapists, Occupational Therapists, Speech Therapists, Social Workers, Nurses and Orthotists. All disciplines evaluate each child at the initial visit with group discussion and consensus on recommendations for management. Subsequent visits may not involve all the clinic personnel. Follow-up visits are scheduled according to need, some in three or six months, some yearly, depending on the child's age and the problems seen at a given time. An exit interview is held with the parents to share the team's recommendations and to answer questions. A written summary of the recommendations is sent to the parents and to the referring physician. Recommended procedures are done by the appropriate specialist apart from the clinic visits except for some diagnostic tests such as x-rays and renal function tests.

At last count the Sioux Falls clinic had 29 patients on the active list with 10 in Rapid City. Sioux Falls had 2 more on a waiting list for clinic openings. Several others are known to live in the state, but are receiving services from clinics in other states (Min-

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nesota, Nebraska) or have not been referred, or perhaps have less severe involvement and are thought not to need comprehensive care.

As better methods of treatment for the problems associated with myelodysplasia become available, the likelihood of affected children growing up to be productive citizens is greater. However, better outcomes are dependent on appropriate provision of care through the child's growing years and beyond. Better outcomes also mean lower long-term costs as long as there is no way to prevent the occurrence of myelodysplasia. The CCHCS multi-disciplinary clinic team has made a good start. Long-term benefits for family and patients are expected as time goes on, not only in better physical health but also in better coping for the families and less frustration for the physicians and others who help in caring for these children.

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Referrals may be made to CCHCS, Pediatric Clinic, Sioux Valley Hospital, Box 5039, Sioux Falls 57117-5039, telephone 333-7188 — or to CCHCS, 725 North LaCrosse, Rapid City 57701, telephone 394-2528.

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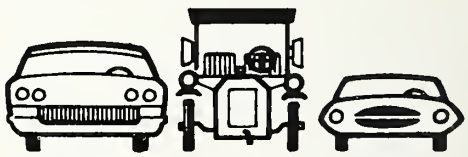

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U.S. Health Official Named AAFP Top Staff Executive

KANSAS CITY, MO. — Dr. Robert Graham, administrator of the Health Resources and Services Administration of the federal Department of Health and Human Services, has been named Executive Vice President of the American Academy of Family Physicians, a national medical association based in Kansas City.

Dr. Graham, a family physician by specialty, is a graduate of the University of Kansas School of Medicine.

The announcement was made by Dr. Robert W. Higgins, Bremerton, Wash., president of the AAFP. Dr. Higgins told an audience of about 275 newly-elected officers of the organization's state and other constituent chapters that Dr. Graham would assume his duties October 13, 1985, at the close of the 1985 annual meeting at Anaheim, Calif.

As of September 1, Dr. Graham will begin working with the AAFP's current Acting Executive Vice President, R. Michael Miller, and other senior staff members of the 57,000-member organization. The Academy is staffed by 135 persons.

"For the last 50 years, American medicine has done an outstanding job of clinical service to the people," Dr. Graham said. "The time has come to provide cost-effective public advocacy in the area of health — not just curing disease, but helping to prevent it through health education and wellness. This is one of medicine's major tasks today, and AAFP must play a key role in it."

Dr. Graham, 42, is no stranger to the Academy. He served as Assistant Director of the AAFP's Division of Education from 1973 to 1976. During two of those three years he also served as administrative officer of the fledgling Society of Teachers of Family Medicine, the family practice specialty's teaching arm.

Thereafter, Dr. Graham spent a brief period as a teacher at Baylor University Medical School in Houston, Tex., and then resumed a career in government service, which he had begun immediately after graduation from medical school in 1970. He joined the Bureau of Health Manpower at what was then the Department of Health, Education and Welfare, and began to move up through the administrative ranks until appointment as Administrator of the Health Resources and Services Administration in 1982.

Dr. Graham, a member of the AAFP, has made numerous speaking appearances at Academy business and educational meetings through the years. He took residency training in family practice at Baptist Memorial Hospital under Dr. Jack Stelmach, a past president of AAFP and founder of the Goppert Family Care Center at Baptist. Dr. Graham also served as executive secretary of the Graduate Medical Education National Advisory Council (GMENAC) a health manpower projection unit whose job was to determine the nation's health personnel needs into the 21st century.

Dr. Graham is married to Dr. Jane Henney, presently the Deputy Director of the National Cancer Institute in Bethesda, Md.

Family Practice in Medical Schools

The Liaison Committee on Medical Education (LCME) has developed new guidelines. Whereas previous guidelines had no specific delineation for family practice, the new guidelines will include the following language.

The traditional clinical subjects which should be offered in the form of required patient-related clerkships are internal medicine, obstetrics and gynecology, pediatrics, psychiatry, and surgery. Under these disciplines or independently, students should receive basic instruction in all organ systems. Instruction and experience in patient care must be provided in both ambulatory and hospital settings and must include the important aspects of acute, chronic, continuing, preventive and rehabilitative care. Many schools now require a clerkship in family medicine. Schools that do not require such a clerkship should ensure that students develop the requisite knowledge, skills, attitudes and behaviors necessary to enter residency programs in family medicine and other primary care specialties.

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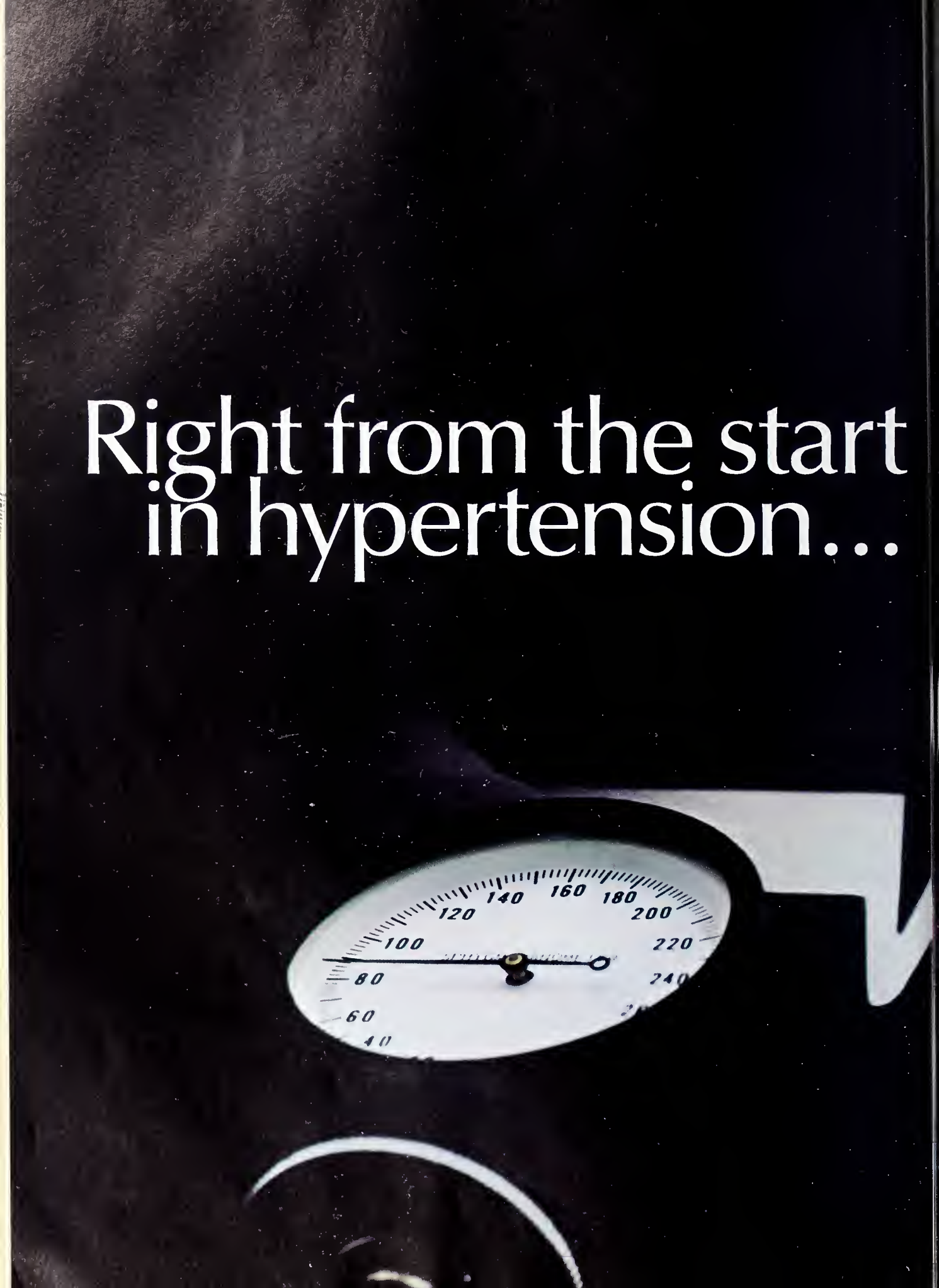

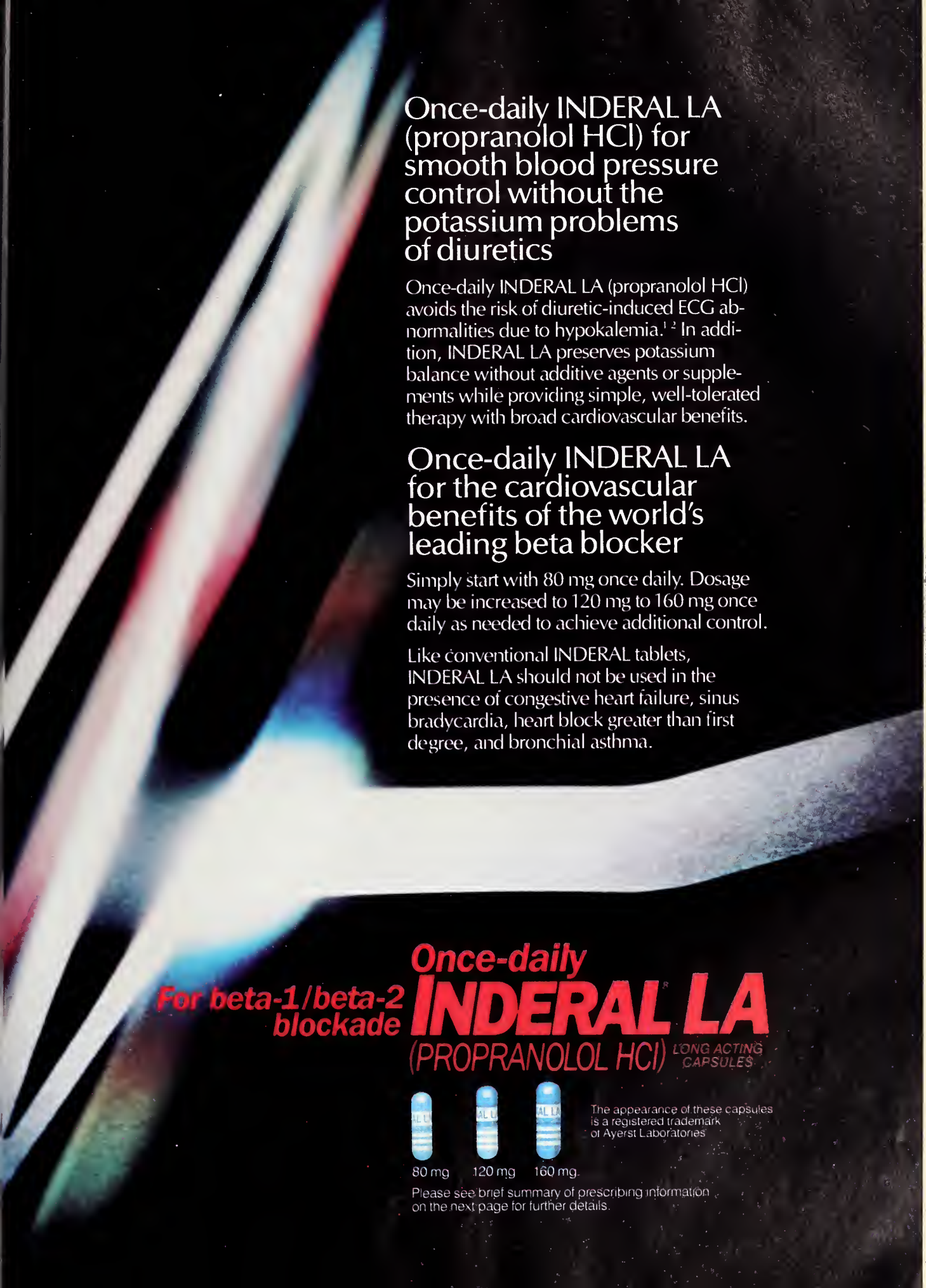

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CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy. Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia; congestive heart failure, intensification of AV block, hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia, visual disturbances, hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

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Evaluation of the Kidner Procedure for Prehallux

Tom D. Howey, M.D.*
David L. Hoversten, M.D.†

ABSTRACT

To evaluate the effectiveness of the Kidner procedure for treatment of painful navicular prominences fifteen procedures in thirteen patients were reviewed. The indications for the procedure were painful prominent navicular processes. The results were based on the patients subjective responses to present relief in foot pain, change in flat-footedness and ability to resume normal activities. Sixty-nine percent felt 80% or more of their symptoms were relieved. Problems persistent after this procedure were 92% had no change in flat-footedness and 61.5% continued to limit their amount of strenuous activity.

The Kidner procedure was first described by Frederick C. Kidner, M.D. in 1929. It was developed for the treatment of prehallux. This is the presence of an accessory navicular bone or a prominent navicular process in the foot. The bone is felt to be a remnant of the prehallux or sixth toe found in lower vertebrates. It is very common being found in five to fourteen percent of all feet. It may or may not be accompanied with pes planus (flat feet). The Kidner procedure has been recommended for treatment of pes planus where prehallux is present or treatment of a painful prehallux when conservative treatment fails. It is also indicated to relieve painful navicular prominences.

MATERIALS AND METHODS

Fifteen procedures on thirteen patients were reviewed. The patients ages ranged from seven to forty-nine years. The average age was 21.9 years. Eleven of the patients were female and two were males.

The most common symptom, twelve of the thirteen patients, was the insidious onset of pain in the navicular area. Five of these twelve patients had a previous history of trauma prior to the onset of pain. One patient was presented by his parents for removal of the prominent naviculars bilaterally with no history of pain.

Two of the patients had bilateral procedures done. Of the procedures thirteen of the navicular prominences had true accessory navicular bones and two had prominent or cornuate navicular. (See anatomy and surgical procedure)

FOLLOW-UP CRITERIA

Following the procedure the patients were contacted by questionnaire. We asked the patient what percent of their foot pain was relieved, change in flat-footedness noted, ability to run, jump and kneel without pain and additional comments they had in addition to the above.

The length of follow-up varied from ten months to thirteen years, five months. The average length of follow-up was 45.6 months.

ANATOMY AND SURGICAL PROCEDURE

The navicular bone is located medially in the first row of tarsals distal to the talus. The tibialis posterior tendon normally passes plantar to the navicular bone to insert on the proximal first and second cuneiform bones along with the bases of the second and fourth metatarsals. (Figures 1 and 2).

In prehallux the accessory navicular is found proximal and medial to the navicular bone. When the ossicle is fused with the navicular it is called a cornuate navicular bone. On examination this can be

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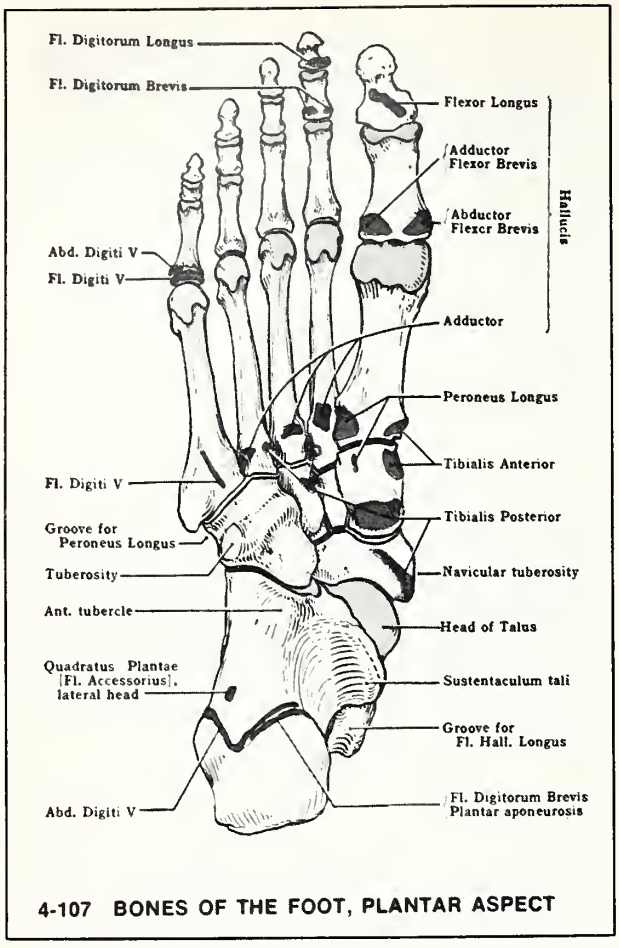

Figure 1
Grant's Atlas of Anatomy, 7th Edition

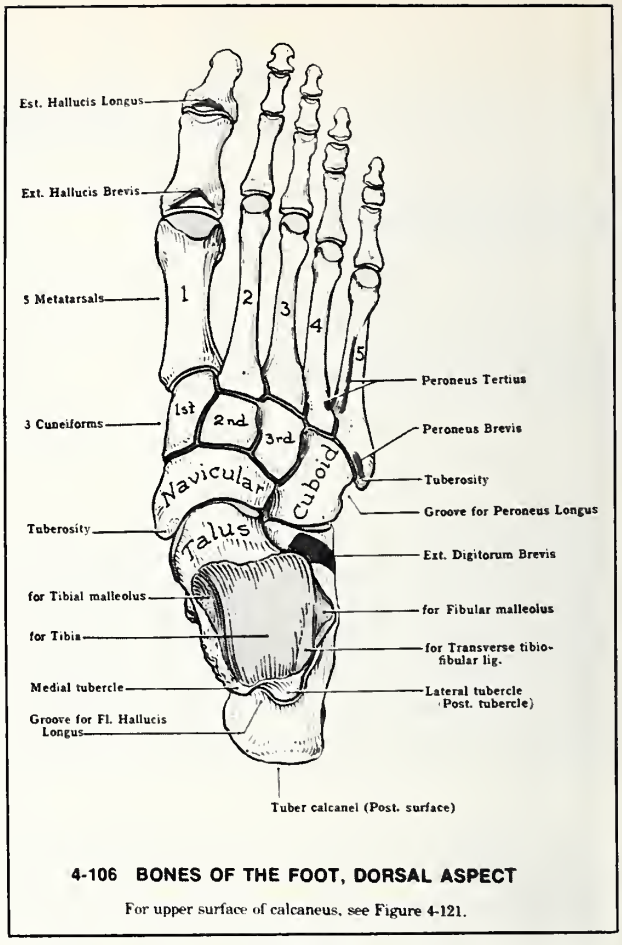

Figure 2
Grant's Atlas of Anatomy, 7th Edition.

felt and seen as a prominence on the medial side of the foot inferior to the medial malleolus. (Figure 3).

On x-ray examination the ossicle may be confused as a fractured navicular bone. This error is easily made because of the joint spaces between the ossicle and the navicular bone which may commonly be irregular or incomplete. (Figure 4).

Often with prehallux the tibialis posterior tendon abnormally inserts a portion of itself to the accessory bone. The remaining portion of the tendon will pass medial instead of inferior to the navicular. This decreases the amount of support the tibialis posterior tendon has on the longitudinal arch between the accessory navicular and the navicular may become arthritic causing pain. The prominence also rubs on footwear causing painful symptoms.

The technique described by Kidner is as follows: The incision extends from inferior to the medial malleolus to the base of the first metatarsal. The tibialis posterior tendon is exposed with sharp dissection. Tendinous insertions to the dorsal and plantar aspects of the navicular are freed. Distal attachments are maintained. Periosteal flaps are then developed with sharp dissection. The accessory navicular or navicular prominence is removed with an osteotome and/or a rongeur. Repositioning of the tendon of the navicular bone is accomplished using nylon suture through the inferior surface of bone. If the periosteal flaps are strong they also may be used

Figure 3
Clinical presentation prehallux DuVrie's Surgery of the Foot, St. Louis 1978.

to hold the tendon in place by suturing the three of them in proper position. The tourniquet is released, hemostasis obtained and the incision is closed. (Figure 5).

Postsurgical care varied from using a posterior splint or a short leg cast for four to six weeks.

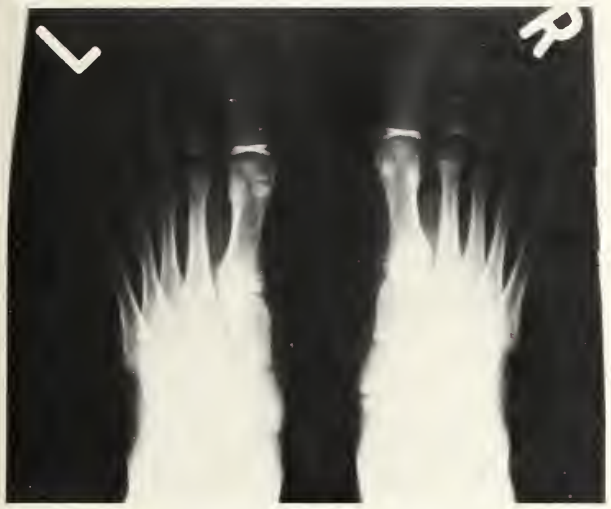

Figure 4
Radiograph showing bilateral accessory navicular bones.

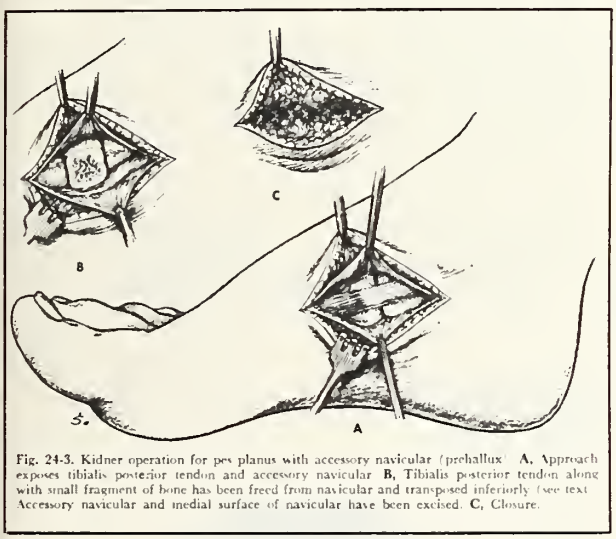

Fig. 24-3. Kidner operation for pes planus with accessory navicular (prehallux). A, Approach exposes tibialis posterior tendon and accessory navicular. B, Tibialis posterior tendon along with small fragment of bone has been freed from navicular and transposed inferiorly (see text). Accessory navicular and medial surface of navicular have been excised. C, Closure.

Figure 5
From Cambell's Operative Orthopedics, St. Louis, 1980.

RESULTS

Of the thirteen patients operated on three had 100% relief of pain, one 95%, five 80%, one 60%, two 40% and one 0%. A total of 69% had 80% or better relief of pain which by our standards is considered good relief of pain. Three of the patients, 23%, had partial relief (40% to 60% improved) and one or 7.7% had no relief.

The only patient who had improvement in flat-footedness was a seven year old. The parents of the patient were concerned about the severe prominences on the patient's feet. There were no symptoms of pain described. Seven of the thirteen patients felt they could resume running and jumping without problems. Six of the patients felt they could not. Both groups contained a variety of ages and amount of activity performed by the patients.

Four of the nine patients who felt they had 80% or better relief were still limiting the amount of running and/or walking to shorter distances. This was because of recurrent pain. Two patients who had 40% or worse improvement stated they would not have had the procedure done if given the choice again. Both of these patients presented with insidious onset of pain.

DISCUSSION

This review shows improvement of symptoms following the Kidner procedure for prehallux in the majority of cases. However, 30% of the patients had less than good relief of pain following the procedure. The ability to resume strenuous activities was significantly limited even in a large number of patients who felt they had achieved 80% or more relief of their pain. Only one case showed any improvement of flat-footedness following the procedure. It is of note, however, this was the youngest patient in the study. A similar review showed good correction of pes planus with the procedure in a younger age group of patients. Cambell's Textbook of Orthopaedics recommends the Kidner procedure for pes planus and possible correction only before the age of ten years. After the age of ten years the indication is persistent symptoms of painful prehallux after conservative management has failed. The improvement in flat-footedness should not be expected.

Patients presenting with painful prehallux either following trauma or with insidious onset should be treated conservatively. This would include stretching of shoes in appropriate areas, orthosis in shoes, anti-arthritic medications and local steroid injections. If conservative management fails the patient may be offered the Kidner procedure. The patient should be informed of the probablity of lessened pain, however the ability for strenuous activities may still be limited. Improvement of flat-footedness should not be expected in older patients. It may be improved in younger patients as shown in earlier studies. This study, however, cannot support that data because of its limited patient population. The question of improvement of flatfootedness as originally described by Kidner requires further study in a youthful population.

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—*Letter From the Editor*—

On behalf of the South Dakota Medical Association Auxiliary, our MOST heartfelt thanks to the Medical Association and its president for the gracious acknowledgements which appeared in the May issue of the **South Dakota Journal of Medicine.**

Please know how much we appreciate this recognition.

Sincerely,
Mary Wrage (Ted), Past President
South Dakota State Medical
Association Auxiliary

South Dakota Society Of Pathologists

Officers for 1983-84

Jerry L. Simmons, M.D., President
John F. Barlow, M.D., Vice President
Beth L. Johnson, M.D., Secretary-Treasurer

Professional Liability Briefs

The Professional Liability Commission of the South Dakota State Medical Association, chaired by Frank Alvine, M.D., Sioux Falls, has been diligently reviewing many aspects of the current professional liability climate in South Dakota as well as nationally. This new column in the Journal is but one effort to share some of their findings and concerns with the entire membership on a quarterly basis.

This introductory article contains information provided by David Gerdes, Pierre. Mr. Gerdes is general counsel to the Medical Association and he offers these suggestions on risk management.

Avoid Loose Talk

Many malpractice claims, both warranted and unwarranted, result from comments made by a physician to a patient concerning care rendered by another physician to that patient. It is difficult for a lay person to distinguish between comments made concerning a bad result from techniques that might be less than negligent and a result caused by a lack of ordinary care on the part of another physician, that is, negligence. A physician making remarks which could be interpreted as being critical should carefully explain to the patient the context of those remarks. It is generally a good rule to follow that overly critical remarks should be avoided unless the physician making them is prepared to repeat them in a courtroom face to face with the physician about which the remarks are made.

Informed Consent

A physician should communicate fully with his patient, discussing openly the proposed course of treatment and the ramification of it. The physician should not assume that his patient has any medical knowledge or that, because the patient has not asked any questions, he fully understands the proposed course of treatment and the ramifications of it. It is important to document the fact that this discussion has occurred. The physician should maintain accurate and complete medical records, so that at a later date the physician can say with certainty what treatment was prescribed, why it was done, and that it was discussed with the patient. A physician should know the problem areas of his particular area of practice and be particularly sensitive to them when maintaining records and describing procedures to his patients.

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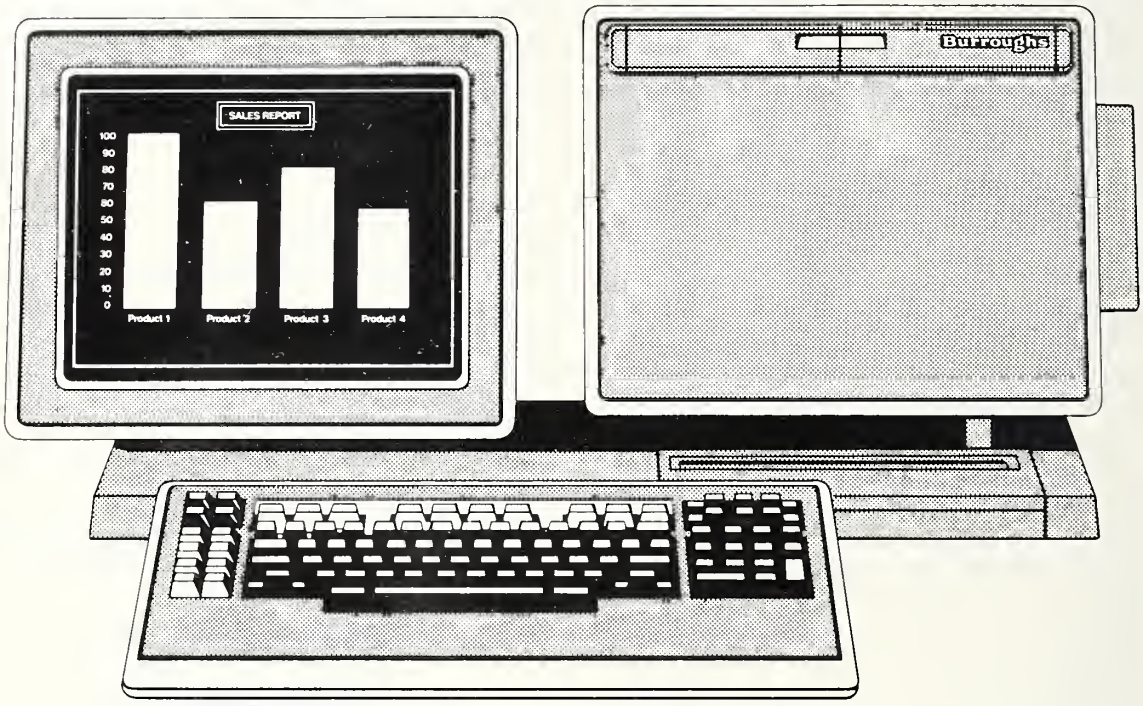
THE FUTURE BELONGS TO THOSE WHO PLAN FOR IT.



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Manuel D. Ramos, M.D., Scotland, was named Fellow of the United States section of the International College of Surgeons.

* * * *

E. A. Johnson, M.D., Milbank, has retired from his medical practice, ending a 41 year career in medicine. Thirty-four of those years have been spent in Milbank. Dr. Johnson has been active in the State Medical Association, both district and state, serving as a councilor at one time. He has served on the clinical faculty of the University of South Dakota for over 20 years. He was one of the doctors who organized South Dakota Blue Cross, Blue Shield and was a board member for 20 years.

* * * *

Judson B. Reaney, M.D., behavioral and developmental pediatrician in Rapid City, was promoted by the USD School of Medicine to clinical associate professor in the Department of Pediatrics. He is responsible for the core curriculum in behavioral pediatrics at the medical school in Sioux Falls and coordinator for pediatric rotation in Rapid City.

* * * *

James R. McGrann, M.D., Sioux Falls, has been elected a Fellow of the American College of Chemosurgery at its recent meeting in Washington, D.C. He is the first South Dakota physician to be elected to Fellowship in this international society.

* * * *

Sioux Falls dermatologist, **Dennis D. Knutson, M.D.,** has been elected president-elect of the Minnesota Dermatologic Society for 1985. He is the first dermatologist from South Dakota to be elected to the executive council of the society.

* * * *

Sioux Falls physician, **Dr. Leycester Owens, Jr.,** and Baltic physician, **Dr. Lloyd E. Solberg** have been elected to Fellowship in the American College of Cardiology.

Several South Dakota physicians who recently completed continuing education requirements to retain active membership in the American Academy of Family Physicians are: **Drs. Byford Anderson,** Lead; **Christine Bucy,** Beresford; and **Tony Berg,** Winner.

* * * *

Kim A. Pederson, M.D., Madison, has been certified by the American Board of Family Practice. Physicians who have been recertified as diplomates of ABFP are: **Drs. Lambert W. Holland,** Chamberlain; **John J. Stransky** and **W. Nicol Guddal,** Watertown; **A. J. Tieszen** and **Raymond J. Zakahi,** Pierre; **Bruce Lushbough** and **Richard Wake,** Brookings; **John A. Malm** and **Raymond G. Nemer,** Gregory; **David Smith,** Yankton; and **Warren Golliher,** Spearfish.

* * * *

The American College of Physicians announced that **John B. Marshall, M.D.,** Rapid City has been elected to Fellowship in the national medical specialty society.

* * * *

Drs. Joel Huber, Redfield; **Craig Hansen,** Rapid City; and **James Gaede,** Mitchell have recently been named Fellows of the American Academy of Family Physicians.

* * * *

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August

Practical Approaches to Managing Trauma, Fox Hills Resort, Mishicot, Wisc., Aug. 1-3. Fee: $230. 11 hrs. AMA Category I & AAFP credits. Contact: Kathleen Fritz, CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Black Hills Summer Seminar, Howard Johnson Motor Lodge, Rapid City, SD, Aug. 8-10. Fee: $100. 16 hrs. AAFP credits. Contact: Black Hills Summer Seminar 3001 S. Holly Ave., Sioux Falls, SD 57105. Phone: (605) 335-5008 or 338-3571.

Advanced Trauma Life Support Provider Course, U. of Kansas Med. Ctr., Kansas City, KS, Aug. 15-16. 16 hrs. AMA Category I & 15 hrs. AAFP credits. Contact: Jody Scott, Dept. of Surg., U. of Kans. Med.Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-6124.

September

Annual Meeting of the American College of Physicians/ South Dakota Society of Internal Medicine, Pierre, SD, Sept. 6-7. Contact: Wm. Taylor, M.D., SD ACP Governor, 201 S. Lloyd St., Aberdeen, SD 57401. Phone: (605) 225-8800.

Heart and Mind: Neurocardiology Update, Hyatt Regency Hotel, Kansas City, MO, Sept. 7. CME credits available. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr. 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Annual Surgery Symposium, Hyatt Regency Hotel, Kansas City, MO, Sept. 12-13. CME credits available. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 77103. Phone: (913) 588-4480.

Kansas Chapter of the American College of Surgeons Meeting, Alameda Plaza Hotel, Kansas City, KS, Sept. 14-15. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Trauma to the Hand: Diagnosis, Treatment and Functional Restoration, Campus Inn, Towsley Ctr., Ann Arbor, MI, Sept. 16-18. Fee: $375. 16½ hrs. AMA Category I credits. Contact: Am. Soc. for Surg. of the Hand, 3025 S. Parker Rd., Suite 65, Aurora, CO 80014. Phone: (303) 755-4588.

Radiology/85: Pediatric Radiology, Willey Hall, U. of Minn., Minneapolis, MN, Sept. 17-20. Fee: $450. 23 hrs. AMA Category I credits. Contact: Audrey Chan, Registrar, CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Tenth Annual South Dakota Perinatal Association Conference, Sioux Falls, SD, Sept. 19-20. Contact: Julie Prince Crane, R.N., Exec. Dir., 1100 S. Euclid Ave., Sioux Falls, SD 57117-5039. Phone: (605) 333-7180.

Special Workshop on the Use of the CO_2 Laser in ENT Surgery, U. of Kansas Med. Ctr., Kansas City, KS, Sept. 19-20. Fee: $625. 14 hrs. AMA Category I credits. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Pulmonary & TB Update, Radisson Plaza Hotel, St. Paul, MN, Sept. 19-21. CME credits available. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Advanced Cardiac Life Support Provider Course, U. of Kansas Med. Ctr., Kansas City, KS, Sept. 25-26. 13.5 hrs. AMA Category I & AAFP credits. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone (913) 588-4480.

October

Annual Internal Medicine Symposium, Battenfeld Aud., U. of Kans., Kansas City, KS, Oct. 9-11. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Advanced Trauma Life Support Provider Course, U. of Kansas Med. Ctr., Kansas City, KS, Oct. 10-11. 16 hrs. AMA Category I and 15 hrs. AAFP credits. Contact: Jody Scott, Dept. of Surg., U. of Kans. Med. Ctr., 29th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-6124.

Practical Toxicology: Health Concerns & Legal Issues in the Workplace, Earle Brown Cont. Ed. Ctr., St. Paul, MN, Oct. 17-18. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Head and Neck Radiology: Advanced Techniques in Diagnostic Imaging, Hyatt Regency Hotel, San Francisco, CA, Oct. 19-20. Fee: $275. AMA Category I credits available. Contact: Dept. of Radiology, U. of CA, San Francisco, San Francisco, CA 94143. Phone: (415) 666-5731.

Medicine and Religion: The Supreme Being, the Supreme Court and the Almighty Dollar, Battenfeld Aud., U. of Kans. Med. Ctr., Kansas City, KS Oct. 22-23. Contact: Promotion Coor., Off. of Cont. Ed., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4488.

53rd Annual Postgraduate Assembly, The Red Lion Inn, Omaha, NE, Oct. 28-30. Contact: Lorraine E. Seible, Exec. Sec., Omaha Mid-West Clinical Society, 7363 Pacific St., #205-B, Omaha, NE 68114. Phone: (402) 397-1443.

STACKS

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Published Monthly by the S.D. State Medical Assn.

Volume XXXVIII August 1985 Number 8

SOUTH DAKOTA JOURNAL OF Medicine

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Transactions of the South Dakota State Medical Association 104th Annual Meeting June 6, 7, 8, 9, 1985

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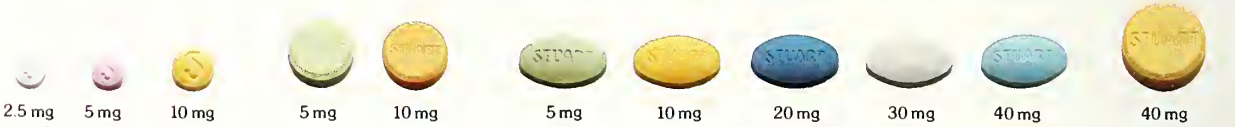

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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NEXT MONTH

Family Practice Residency Survey

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President's Page

As you know at the last meeting of the SDSMA House of Delegates, a resolution to form a statewide IPA-HMO was passed. I am sure throughout the state there is a feeling of uneasiness about this venture. I was asked by a physician, "Do we have a choice?" My answer was that this is the only feasible means we have at this time to keep the physician-patient relationship, as we now know it, intact.

SDHMO is to be structured upon a foundation of strength already present in our health care delivery system.

1. Allowing patients free choice of physician.
2. Allowing existing relationship between patient and physician to be maintained.
3. Allowing physicians to continue to practice in their own private offices and to treat both HMO and non-HMO patients.
4. Encouraging the delivery of the highest quality health services by:
   (a) The design of a benefit package which allows treatment in the setting most appropriate to the patient's condition.
   (b) Not altering the basic method of paying physicians for their services.

In visiting with physicians involved with for-profit HMO's managed by businessmen, it was felt that if the SDSMA could form and operate a statewide HMO it would be in the best interest for all of us. The state of Georgia pre-empted us and passed a similar plan a few weeks prior to our action.

For this to be successful it will take 100% cooperation from each and everyone of us. We must be supportive and remain unified in our efforts.

As a reminder in closing, remember that this will be run by a board of directors (physicians) elected by the membership of the SDSMA.

R. G. Gere, M.D.

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Duane Reaney, M.D. (1986) Yankton
Richard Porter, M.D. (1986) Yankton
James Larson, M.D. (1986) Watertown

DEPARTMENT OF SOCIAL SERVICES MEDICAL ADVISORY COMMITTEE
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Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: **Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

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Charles O'Brien, M.D. (1986) Sioux Falls
Werner Boade, M.D. (1986) Sioux Falls
J. Michael McMillin, M.D. (1986) Sioux Falls

REPORT OF THE BUDGET AND AUDIT COMMITTEE

Thursday, 8:30 a.m. **Howard Johnson Motor Lodge**
June 6, 1985 **Sioux Falls, South Dakota**

The meeting was called to order at 8:30 a.m. by Clark Likness, M.D., Chairman of the Budget and Audit Committee. Present for roll call were Doctors Likness, Howard Saylor, Richard Gere, W. O. Rossing, M. George Thompson, Robert Ferrell, Frank Messner, and Bruce Lushbough.

The Budget and Audit Committee reviewed the CPA audit prepared by McGladrey Hendrickson & Pullen. Mr. Robert Johnson reviewed the information contained in the audit for the committee and answered questions concerning the various account statements. Dr. Saylor moved that the Budget and Audit Committee accept the CPA audit as submitted. This concluded the work of the Budget and Audit Committee.

The committee then met as the Executive Commission of the South Dakota State Medical Association and considered two requests from the National Health Service Corp for recommendation on physician placement.

The Commission reviewed the requests submitted by the National Health Service Corp to place David Dawson, M.D. in the community of Webster. Dr. Gere moved that the Executive Commission support the District Medical Society statement and send the comments of the District to the National Health Service Corp. The motion was seconded by Dr. Rossing and carried.

The Commission reviewed the information received to place Jeffery Hanson in the community of Rosebud, South Dakota. Dr. Saylor moved that the Executive Commission forward its approval to the State Health Department. The motion was seconded by Dr. Gere and carried.

Mr. Johnson then discussed the state health plan. He indicated that each member of the Executive Commission would receive a copy of the plan and a conference call could be scheduled at a later date to determine what action, if any, is indicated.

The meeting adjourned at 10:00 a.m.

FIRST COUNCIL MEETING MINUTES

Thursday **Dakota Room C**
June 6, 1985 **Howard Johnson Motor Lodge**
10:00 a.m. **Sioux Falls, South Dakota**

The meeting was called to order by Robert Ferrell, M.D., Chairman of the Council at 10:00 a.m. Those members present were Drs. Howard Saylor, Richard Gere, W. O. Rossing, M. George Thompson, Joseph Hamm, Robert Ferrell, Frank Messner, G. E. Tracy, Bruce Lushbough, G. H. Steele, J. A. Eckrich, James Larson, Curtis Wait, R. C. Jahraus, David Buchanan, Charles Monson, Michael Pekas, R. E. Gunnarson, John Ochsner, Richard Tschetter, Lowell Hyland, John Sternquist, R. I. Porter, James Jackson, Tom Krafka, James Wunder, Joseph Kass, James Reynolds, Clark Likness, K. Gene Koob, and Frank Alvine. Also present were Drs. Nathaniel Whitney, Louis Hogrefe, Dennis Johnson, Robert Quinn from the School of Medicine, and Mr. Dennis Duncan and Mr. Paul Jensen from the Foundation for Medical Care.

Dr. Porter moved to accept the minutes of the previous meeting as printed and distributed. The motion was seconded and carried.

I. AMERICAN FAMILY INSURANCE UPDATE — Bob Johnson reported to the Council the status of this matter. The research by the Association's attorney is proceeding and the legal papers will be filed shortly. Mr. Johnson may be contacting individual physicians for documented evidence in support of certain claims in the lawsuit. **Dr. Pekas moved to accept the report. The motion was seconded and carried.**

II. HMO PROPOSAL — Mr. Johnson brought the Council up to date on this. Mr. Jensen and Mr. Duncan were present to answer questions. The Council was apprised of the various activities of certain HMOs already in the state. **Dr. Saylor moved that the Council recommend to the House of Delegates that we proceed with the formation of an IPA-HMO of the South Dakota State Medical Association in conjunction with South Dakota Blue Shield. The motion was seconded and carried.**

III. MEDICAL SCHOOL — Dr. Quinn reviewed the recommendations contained in the site visit report on the reaccreditation of the medical school and the status of the surgical residency program. This was accepted for information.

IV. STATEWIDE TUMOR REGISTRY — Dr. Koob reviewed this with the Council. **Dr. Saylor moved that the Council rescind its previous action and refer this back to the Commission on Scientific Medicine for further study and recommendation. The motion was seconded and carried.**

V. ITINERANT SURGEONS IN SOUTH DAKOTA — Dr. Eckrich reviewed the physician marketing activities of out of state doctors in South Dakota. **Dr. Tracy moved that the Council refer this matter to the South Dakota State Board of Medical and Osteopathic Examiners. The motion was seconded and carried.**

VI. NOMINATION OF DR. QUINN TO AMA GRADUATE MEDICAL EDUCATION ADVISORY COMMITTEE — **Dr. Tracy moved that the Council nominate Dr. Quinn to the AMA Graduate Medical Education Advisory Committee. The motion was seconded and carried.**

VII. TITLE 19 MEDICAL ADVISORY REPORT — Dr. Dennis Johnson reviewed his written report to the Council. **Dr. Hamm moved that the Council accept the report and that this report be read to the House of Delegates. The motion was seconded and carried. Dr. Reynolds moved that this report then be referred to the Commission on Legislation and Governmental Relations for further study. The motion was seconded and carried.**

VIII. REQUEST FOR ASSISTANCE, PALEOPATHOLOGY ASSOCIATION — **Dr. Saylor moved that this matter be deferred to the next Council meeting if Dr. Gregg is present. The motion was seconded and carried.**

IX. RESOLUTION FROM YANKTON DISTRICT MEDICAL SOCIETY — **Dr. Jackson moved that the Council take no action concerning the resolution from the Yankton District Medical Society opposing the closing of the USD nursing school inasmuch as this subject is now moot. The motion was seconded and carried.**

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X. PHYSICAL THERAPY PRACTICE — Mr. Johnson reviewed the position statement from the S.D. Physical Therapy Association which states it is now ethical for physical therapists to practice without physician referral in a jurisdiction in which it is legal. **Dr. Saylor moved that this matter be referred to the appropriate commission for further evaluation and specific action. The motion was seconded and carried.**

XI. 1986 FEDERAL BUDGET-MEDICARE FREEZE — Mr. Johnson reviewed this with the Council. This was accepted for information.

XII. AAFP — **Dr. Gere moved to refer this to the Commission on Legislation and Governmental Relations through regular channels and that AAFP be notified this cannot be handled within their specified time frame. The motion was seconded and carried.**

There being no further business, the meeting adjourned at 11:30 a.m.

SECOND COUNCIL MEETING MINUTES

Sunday
June 9, 1985
11:00 a.m.

Dakota Room A
Howard Johnson Motor Lodge
Sioux Falls, South Dakota

The meeting was called to order by Dr. Robert Ferrell, Chairman of the Council. Those present for roll call were Drs. Richard Gere, W. O. Rossing, Robert Ferrell, M. George Thompson, Howard Saylor, Frank Messner, G. E. Tracy, Bruce Lushbough, G. H. Steele, J. A. Eckrich, Curtis Wait, R. C. Jahraus, David Buchanan, Charles Monson, Michael Pekas, Guy Tam, Richard Tschetter, John Sternquist, Richard Porter, James Jackson, Thomas Krafka, Louis Hogrefe, James Wunder, James Reynolds, Jay Bachmayer, K. Gene Koob and Frank Alvine. Also present were Drs. Joseph Hamm, Joseph Kass, Jerry Simmons, M. Elizabeth Craig, President of the Minnesota Medical Association, and Mr. Paul Jensen and Mr. Denny Duncan from the Foundation for Medical Care.

Dr. Saylor moved to dispense with the reading of the minutes of the previous meeting inasmuch as they will be published. The motion was seconded and carried.

I. COMMENTS BY DR. M. ELIZABETH CRAIG — Dr. Craig discussed briefly HMOs, and in particular those in Minnesota which was the birthplace of the first HMO.

II. ELECTION OF COUNCIL CHAIRMAN — Dr. Lushbough nominated Dr. Michael Pekas. **Dr. Tracy moved that nominations cease and a unanimous ballot be cast for Dr. Pekas. The motion was seconded and carried.**

III. ELECTION OF SECRETARY-TREASURER — Dr. Messner nominated Dr. M. George Thompson. **Dr. Saylor moved that nominations cease and a unanimous ballot be cast for Dr. Thompson. The motion was seconded and carried.**

IV. PROPOSED DATES FOR 1985 COUNCIL MEETINGS — **Dr. Tracy moved that the Fall Council meeting be set for September 27, 1985; Winter Council meeting for November 22, 1985 in conjunction with the Hospital Association and Executive Commission meeting on November 20 and 21, 1985. The motion was seconded and carried.**

V. POTTER COUNTY SUIT — Mr. Johnson reviewed with the Council members information he had received from Dr. Broadhurst concerning this suit. **Dr. Lushbough moved that when the executive office receives the transcript and information on this matter that it be referred to the Association's attorney and reported back to the Council at their next meeting. The motion was seconded and carried.**

VI. RESOLUTION FROM S.D. PATHOLOGY SOCIETY — Mr. Johnson read the resolution received from the S.D. Pathology Society. Dr. Simmons, President of the S.D. Pathology Society, was present and presented their concerns.

RESOLUTION

TO: Council
South Dakota State Medical Association
FROM: South Dakota Pathology Society
SUBJECT: IPA-HMO Board of Directors
WHEREAS, laboratory services provide an often pivotal role in the practice of medicine, and
WHEREAS, laboratory costs may represent a substantial part of dispersements for the proposed SDSMA IPA-HMO,
BE IT RESOLVED, the South Dakota Society of Pathologists petitions the Council of the SDSMA to appoint at least one pathologist to the initial board of directors of the IPA-HMO should it be approved by the House of Delegates. The South Dakota State Society of Pathologists unanimously suggests Karl Wegner, M.D. be considered for that position with Barry Pitt-Hart, M.D. as an alternate choice.

Dr. Wunder moved that the Council appoint the Executive Commission to serve as the first Board of Directors of the Association's IPA-HMO. The motion was seconded. Dr. Krafka moved to amend the motion to clarify it as being the 1985-86 Executive Commission and Dr. Joseph Hamm. The motion was seconded. The amendment was voted on and carried. The motion was then voted on and carried.

VII. ADVISORY BOARD — **Dr. Jackson moved that inasmuch as the Council appointed the first Board of Directors of the IPA-HMO, that the Council be used as the Board of Director's advisory body. The motion was seconded and carried.**

VIII. ANNUAL AWARDS — **Dr. Buchanan moved that the Council consider presenting only one award each year in lieu of the Community Service Award and Distinguished Service Award.** The motion died for lack of a second.

The Council expressed its appreciation to Dr. Ferrell as the outgoing Council chairman.

There being no further business, the meeting adjourned at 11:30 a.m.

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MINUTES OF THE FIRST HOUSE OF DELEGATES MEETING

8:30 a.m. **Howard Johnson Motor Lodge**
Friday, June 7, 1985 **Sioux Falls, South Dakota**

The meeting was called to order at 8:45 a.m. by Frank Messner, M.D., Speaker of the House. Mr. Robert Johnson, Executive Secretary, called the roll. Those present were the following members: Doctors Howard Saylor, Richard Gere, W. O. Rossing, M. George Thompson, Frank Messner, Joseph Hamm, Granville Steele, Jerome Eckrich, James Larson, Curtis Wait, R. C. Jahraus, David Buchanan, Charles Monson, Lowell Hyland, Michael Pekas, Richard Porter, John Sternquist, Robert Ferrell, James Jackson, Thomas Krafka, James Wunder, Joseph Kass, Jay Bachmayer, Alfred Shousha, W. Nicol Guddal, Parry Nelson, Tad Jacobs, Ronald Long, Tom Huber, Ravi Kapur, Theodore Hohm, Joseph Dilger, Jeffrey Hagen, Verdayne Brandenburg, Michael Ferrell, Bradley Randall, Jerome Freeman, C. Roger Stoltz, Bruce Vogt, Guy Tam, Edward Clark, R. J. Foley, Duane Reaney, Morris Radack, Robert Bloemendaal, N. R. Whitney, Richard Renka, James Rud, J. Geoffrey Slingsby, Robert Williams, John Malm, James Collins and Joseph Kass. A quorum was present and the meeting was declared competent to proceed.

Dr. Gere moved that the minutes of the previous meeting not be read inasmuch as they were published in the SOUTH DAKOTA JOURNAL OF MEDICINE. The motion was seconded and carried.

Mrs. Marie Hovland presented the AMA-ERF checks to Dr. Robert Quinn, Dean of the USD School of Medicine, on behalf of the South Dakota Auxiliary.

Dr. Saylor, President of the South Dakota State Medical Association, presented the following awards:

C. B. Alford Award — Robert Hayes, M.D., Wall, South Dakota
Past President's Award — Joseph Hamm, M.D., Sturgis, South Dakota
Community Service Award — George Mangulis, M.D., Philip, South Dakota
Distinguished Service Award — William R. Taylor, M.D., Aberdeen, South Dakota
50 Year Awards — Bernard S. Clark, M.D., Spearfish, South Dakota
Arthur P. Reding, M.D., Marion, South Dakota

Dr. Messner then announced the appointments to the Nominating Committee as follows:

District # 1 — J. A. Eckrich, Jr., M.D.
District # 2 — W. N. Guddal, M.D.
District # 3 — Curtis Wait, M.D.
District # 4 — Thomas Huber, M.D.
District # 5 — Ravi Kapur, M.D.
District # 6 — Joseph Dilger, M.D.
District # 7 — Michael Pekas, M.D.
District # 8 — Richard Porter, M.D., Chairman
District # 9 — James Jackson, M.D.
District #10 — Tony Berg, M.D.
District #11 — James Wunder, M.D.
District #12 — Joseph Kass, M.D.

Appontments to the various reference committees were announced as follows:

Reference Committee on Credentials, Resolutions and Memorials, Reports of Officers and Councilors:
Parry Nelson, M.D., Chairman
James Collins, M.D.
Guy Tam, M.D.

Reference Committee on Reports of Commissions on Medical Service, Legislation and Governmental Relations:
James Rud, M.D., Chairman
John Sternquist, M.D.

Reference Committee on Reports of Commissions on Scientific Medicine, Internal Affairs, Communications and Liaison, and Professional Liability:
Michael Ferrell, M.D., Chairman
John Malm, M.D.
Charles Monson, M.D.

Reference Committee on Reports of Special Committees and Miscellaneous Business:
Thomas Krafka, M.D., Chairman
Jerome Freeman, M.D.
Jay Bachmayer, M.D.

Dr. Monson moved that the reports of the President, President-elect, Vice President, Secretary-Treasurer, Chairman of the Council, Delegate and Alternate Delegate to the AMA, Speaker of the House, Councilor at Large, Executive Secretary and Councilors not be read and referred to the appropriate reference committee. The motion was seconded and carried.

Dr. Messner called for the introduction of resolutions from the District Societies which have not been published in the Handbook. Dr. W. Nicol Guddal read Resolution #4 concerning Blue Cross/Blue Shield insurance. The resolution was referred to Reference Committee #2, Reference Committee on Reports of Commissions on Medical Service, Legislation and Governmental Relations.

RESOLUTION #4

TO: House of Delegates
South Dakota State Medical Association
FROM: Watertown District Medical Society
SUBJECT: Blue Cross-Blue Shield Insurance
WHEREAS, insurance companies routinely request physicians to file reports and review records of patients who are applying for insurance coverage, and
WHEREAS, completion of such reports and review of such records requires personal time and attention of the physician, and
WHEREAS, most insurance companies directly reimburse the physician a reasonable fee for performing these services on their behalf, and
WHEREAS, Blue Cross of Western Iowa and South Dakota request such reports for purposes of underwriting prospective insureds, and
WHEREAS, Blue Cross of Western Iowa and South Dakota does not reimburse for such physician services, and
WHEREAS, Blue Cross of Western Iowa and South Dakota expects the patient (insurance applicant) to reimburse the physician directly, and
WHEREAS, this policy has caused considerable confusion on the part of the patient and on occasion ill will between the physician and the patient.
NOW THEREFORE BE IT RESOLVED, that the South Dakota State Medical Association strongly encourages Blue Cross of Western Iowa and South Dakota to modify their current policy and provide for direct reimbursement to physicians for preparation of such reports and records.

Resolution amended at Second House of Delegates meeting. See Report of Reference Committee on Reports of the Commission on Medical Service and the Commission on Legislation and Governmental Relations.

Dr. Messner read Resolution #3 which was submitted by the Council regarding the establishment of an IPA-HMO. The resolution was referred to Reference Committee #4, Reference Committee on Reports of Special Committees and Miscellaneous Business.

RESOLUTION #3

TO: House of Delegates
South Dakota State Medical Association
FROM: Council
South Dakota State Medical Association
SUBJECT: IPA-HMO
RESOLVED, that the Association proceed with the formation of an IPA-HMO of the South Dakota State Medical Association in conjunction with South Dakota Blue Shield.

Resolution was amended at Second House of Delegates Meeting. See the Report of the Reference Committee on Reports of Special Committees and Miscellaneous Business.

Dr. Messner asked Mr. Johnson to read a report from Dr. Dennis Johnson concerning the Title 19 Medical Advisory Committee as directed by the Council.

TITLE 19 MEDICAL ADVISORY COMMITTEE REPORT FROM DR. DENNIS JOHNSON

At the Title 19 Medical Advisory Committee Meeting in Pierre on April 9, 1985, we discussed quite a number of matters. Of interest is the fact that most providers this year will be enjoying a three to five percent increase in their allowances whereas they expect the cost of administration to remain the same and of course the cost of physician fees to remain the same. From the tone of the discussion, it was quite obvious that there will not be any action on the part of the agency to seek a higher reimbursement level for physicians ever on their own initiative. They suggested that the only way in which this could be accomplished would be to have a strong lobby from the S.D. Medical Society, to influence the governor, the agency and the state representatives. I would suggest that we get a letter and personal campaign going to contact these legislators. A number did ask appropriate questions at the legislative hearings, but without pressure to change the budget, it certainly was not going to add any more money for physicians who are perceived as being over paid anyway. I think it is of note, that the department freely admits that they do not have data on the 1977 base which we are supposed to be paid in the 75th percentile at the present time. Should a doctor run his business in the same manner, he would most certainly be called on the carpet for fraud. They extrapolated the data, but admit that they had no data base to establish what 1977 charges were. I think if this were known to the governor and the legislators, perhaps we would have stronger ground for objecting to a freeze.

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Another item, the projected savings of 10 percent from the use of generic drugs has been shaken down by a computer, and it appears as though there has been a 2.5 percent savings in the Title 19 drug expenditures due to the use of generic drugs. The generic drugs are very widely accepted and are the predominant form of medication and yet only a 2.5 percent savings has been achieved.

The department is anticipating a 5 percent decrease to come down from Congress with regards to Medicaid funds. Another interesting note that between federal and state money, it does cost about $74,000 per quarter to run the MMIS computer system and in the past year, they feel they may have uncovered enough fraud to warrant one $10,000 fine and one $20,000 fine. This does not appear to be a very high return on their computer investment.

A suggestion was made, that the State Department of Health and the Social Services Department cooperate in their inspection teams for nursing homes, and try to consolidate and agree upon certain standards. It was the feeling of the committee that this should be done, but I believe more political pressure is gong to be necessary before it is actually accomplished.

Dr. Pekas moved that the Commission and Committee reports not be read and referred to the appropriate reference committee. The motion was seconded and carried.

RESOLUTION #1

TO: House of Delegates
South Dakota State Medical Association
FROM: Seventh District Medical Society
SUBJECT: Hospital Staff Privileges for Non-Doctors of Medicine or Osteopathy
WHEREAS, the Seventh District Medical Society has in the past and will continue to stand for the highest quality care available for our patients, and
WHEREAS, this requires knowledge of all body systems and possible abnormalities, and
WHEREAS, the care of patients by non-doctors of medicine, non-doctors of osteopathy and non-dentists would jeopardize this total care,
BE IT RESOLVED, that the Seventh District Medical Society recommends to the hospitals within the district that full staff privileges and full staff membership for non-doctors of medicine, non-doctors of osteopathy or non-dentists not be granted.

Resolution was amended at Second House of Delegates meeting. See the report of the Reference Committee on Reports of the Commission on Medical Service and the Commission on Legislation and Governmental Relations.

RESOLUTION #2

TO: House of Delegates
South Dakota State Medical Association
FROM: Council
SUBJECT: Auxiliary 75th Anniversary
WHEREAS, the Auxiliary to the South Dakota State Medical Association was established in 1910, and
WHEREAS, the Auxiliary has endeavored throughout the years to improve the health and quality of life for all South Dakotans, and
WHEREAS, the Auxiliary has willingly and capably assisted the State Medical Association in the development of educational and community health related programs, therefore
BE IT RESOLVED, that the South Dakota State Medical Association acknowledges and commemorates the Auxiliary on this its 75th anniversary.

Resolution was adopted at Second House of Delegates meeting.

Dr. Messner made several announcements concerning the annual meeting schedule.

The meeting adjourned at 9:30 a.m.

MINUTES OF THE SECOND HOUSE OF DELEGATES MEETING

9:30 a.m. **Dakota Rooms B & C**
Sunday **Howard Johnson Motor Lodge**
June 9, 1985 **Sioux Falls, South Dakota**

The meeting was called to order by Frank Messner, M.D., Speaker of the House. Those present for roll call were Drs. Howard Saylor, Richard Gere, W. O. Rossing, M. George Thompson, Frank Messner, Gerald E. Tracy, Bruce Lushbough, Joseph Hamm, G. H. Steele, J. A. Eckrich, Jr., Curtis Wait, R. C. Jahraus, David Buchanan, Charles Monson, Richard E. Gunnarson, Richard Tschetter, Michael Pekas, Richard Porter, John Sternquist, Robert Ferrell, James Jackson, James Wunder, Joseph Kass, Jay Bachmayer, Alfred Shousha, Warren Redmond, W. Nicol Guddal, Parry Nelson, Tad Jacobs, Tom Huber, Ravi Kapur, Joseph Dilger, Jeffrey Hagen, Michael Ferrell, Brad Randall, Jerome Freeman, C. Roger Stoltz, Daniel Kennelly, Guy Tam, Edward Clark, James Quale, Gail Benson, R. J. Foley, Jon Flom, Morris Radack, N. R. Whitney, Thomas Krafka, Richard Renka, James Rud, J. Geoffrey Slingsby, Robert Williams, Louis Hogrefe and David Yecha.

A quorum was present and the meeting was declared competent to proceed.

Dr. Gere moved to dispense with the reading of the minutes of the previous meeting inasmuch as they will be published and distributed. The motion was seconded and carried.

Dr. Richard Porter read the report of the Nominating Committee.

REPORT OF THE NOMINATING COMMITTEE

The Nominating Committee submits the following recommendations for the consideration of the House of Delegates:

OFFICERS	
President-Elect	William O. Rossing, M.D.
Vice President	Robert L. Ferrell, M.D.
Speaker of the House	Frank D. Messner, M.D.
COUNCILORS — 3 year terms	
Sioux Falls District #7	Guy Tam, M.D.
Yankton District #8	Richard Porter, M.D.
Black Hills District #9	Thomas Krafka, M.D.
Rosebud District #10	Louis Hogrefe, M.D.
Northwest District #11	James Wunder, M.D.
Whetstone Valley District #12	Visvaldis Janavs, M.D.
ALTERNATE COUNCILORS — 3 year terms	
Sioux Falls District #7	Lawrence Finney, M.D.
Yankton District #8	John Sternquist, M.D.
Black Hills District #9	Nathaniel Whitney, M.D.
Rosebud District #10	R. G. Nemer, M.D.
Northwest District #11	L. M. Linde, M.D.
Whetstone Valley District #12	Lawrence Nelson, M.D.

ANNUAL MEETING SITE
1986 — Rapid City, SD, June 5, 6, 7, 8, 1986
1987 — Sioux Falls, SD, June 4, 5, 6, 7, 1987
1988 — Rapid City, SD, June 2, 3, 4, 5, 1988

The Committee also recommends that the Executive Office survey the membership of the South Dakota State Medical Association as to their desire of adding Aberdeen to the rotation inasmuch as new facilities recently have been completed which would adequately house the convention.

Respectfully submitted,
NOMINATING COMMITTEE
Richard Porter, M.D., Chairman
J. A. Eckrich, Jr., M.D.
W. N. Guddal, M.D.
Curtis Wait, M.D.
Tom Huber, M.D.
Ravi Kapur, M.D.
Joseph Dilger, M.D.
Michael Pekas, M.D.
James Jackson, M.D.
Tony Berg, M.D.
James Wunder, M.D.
Joseph Kass, M.D.

Dr. Messner called for nominations from the floor. There being no nominations from the floor, **Dr. Saylor moved to elect the officers, councilors and alternate councilors as submitted and to accept the report of the Nominating Committee. The motion was seconded and carried.**

Dr. Messner introduced Dr. M. Elizabeth Craig, President of the Minnesota Medical Association, and Dr. Francis Donahue, President of the Nebraska Medical Association, Dr. Herbert Reese and Dr. Dwaine Peetz, Past Presidents of the Nebraska Medical Association.

Dr. Messner introduced Dr. Harrison L. Rogers, AMA President Elect. Dr. Rogers reviewed the dramatic changes taking place in medicine including new products, payment to doctors and systems of health care delivery. He indicated the number one problem is the rising cost of health care although hospital stays have shortened. There was a 22% growth in the development of HMO's last year and he anticipates this will increase even more this year. He encouraged all physicians to participate in organized medicine.

Dr. Messner introduced Mary Kay McPhee, National Auxiliary President Elect. Mrs. McPhee addressed the House to reinforce that the Auxiliary shares the same concerns as the doctors do. The Auxiliary has the roll of communication by making their members knowledgeable, action to assure in all ways medicine's voice is heard and support to help families withstand the pressures. Next year Auxiliary's emphasis will be on media contacts, Med vote, federated membership, greater legislative involvement, help for impaired physicians, malpractice suits and emotional problems relating thereto, good health and raising funds.

Dr. Parry Nelson read the report of the Reference Committee on Credentials, Resolutions and Memorials and Reports of Officers and Councilors.

REPORT OF THE REFERENCE COMMITTEE ON CREDENTIALS, RESOLUTIONS AND MEMORIALS AND REPORTS OF OFFICERS AND COUNCILORS

The following delegates, alternate delegates, officers and councilors of the South Dakota State Medical Association were present: Drs. Howard Saylor, Richard Gere, W. O. Rossing, M. George Thompson, Frank Messner, Joseph Hamm, G. H. Steele, Jerome Eckrich, James Larson, Curtis Wait, R. C. Jahraus, David Buchanan, Charles Monson, Lowell Hyland, Michael Pekas, Richard Porter, John Sternquist, Robert Ferrell, James Jackson, Thomas Krafka, James Wunder, Joseph Kass, Jay Bachmayer, Alfred Shousha, W. N. Guddal, Parry Nelson, Tad Jacobs, Ronald Long, Tom Huber, Ravi Kapur, Theodore Hohm, Joseph Dilger, Jeffrey Hagen, Verdayne Brandenburg, Michael Ferrell, Bradley Randall, Jerome Freeman, C. Roger Stoltz, Bruce Vogt, Guy Tam, Edward Clark, R. J. Foley, Duane Reaney, Morris Radack, Robert Bloemendaal, N. R. Whitney, Richard Renka, James Rud, J. Geoffrey Slingsby, Robert Williams, John Malm, James Collins and Joseph Kass.

A quorum was present for the meeting of the House of Delegates. Total registration for the convention is 281, including 145 physicians, 18 guests, 67 Auxiliary members and 51 sponsors.

The committee submits the following resolution for the consideration of the House of Delegates:

WHEREAS, the Sioux Falls District Medical Society, the Sioux Falls District Auxiliary and the Yankton District Auxiliary members have been so thorough in making arrangements for the success of the combined meeting of our Annual Meeting,

BE IT RESOLVED, that the South Dakota State Medical Association give its voice in appreciation and thanks to the local physicians in the Sioux Falls District Medical Society and the members of the Sioux Falls District Auxiliary and the Yankton District

HEALTH SCIENCES LIBRARY

Auxiliary.

WHEREAS, the management of the Howard Johnson Motor Lodge has been so cooperative in providing facilities for the success of the Annual Meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Howard Johnson Motor Lodge.

WHEREAS, the Sioux Falls Argus Leader, KELO TV and radio, KSFY TV, KSOO radio, KXRB radio, KKRC radio and the Associated Press have been most cooperative in presenting the public news of the annual meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Sioux Falls Argus Leader, KELO TV and radio, KSFY TV, KSOO radio, KXRB radio, KKRC radio and the Associated Press.

WHEREAS, the Minnehaha Country Club has been most cooperative in providing facilities for the golf tournament and Thursday evening party and the Auxiliary luncheon on Saturday,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Minnehaha Country Club.

WHEREAS, the Crooks Gun Club has been most cooperative in providing facilities for the trap shoot on Thursday afternoon,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Crooks Gun Club.

BE IT RESOLVED, that $50 be donated to the South Dakota Medical School Endowment Association in memory of the following physicians who died during the past year:

John H. Dickinson, M.D.
Robert A. Weber, M.D.
S. W. Fox, M.D.
G. 1. W. Cottam, M.D.
Charles A. Johnson, M.D.
Myrtle Carney, M.D.
J. A. Eckrich, Sr., M.D.
Richard Leander, M.D.
George Wood, M.D.

The Committee wishes to extend its thanks and appreciation to the sponsors and their representatives for their support of the South Dakota State Medical Association's Annual Meeting.

The Committee reviewed the reports of the officers and councilors and recommends they be accepted as submitted.

The Committee would also like to recognize the superb and outstanding work and ability of our Executive Secretary, Robert Johnson and his staff during this past year in conducting the business of the South Dakota State Medical Association.

Respectfully submitted,
REFERENCE COMMITTEE ON CREDENTIALS, RESOLUTIONS AND REPORTS OF OFFICERS AND COUNCILORS
Parry Nelson, M.D., Chairman
James Collins, M.D.
Guy Tam, M.D.

Dr. Saylor moved to accept the Report of the Reference Committee on Credentials, Resolutions and Memorials and Reports of Officers and Councilors. The motion was seconded. Dr. Hamm reported on the status of the Medical School Endowment Association. **The motion carried.**

Dr. James Rud read the report of the Reference Committee on Reports of the Commission on Medical Service and the Commission on Legislation and Governmental Relations.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF THE COMMISSION ON MEDICAL SERVICE AND THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

The Reference Committee carefully reviewed the report of the Commission on Legislation and Governmental Relations. It was noted that although the optometry bill was finally defeated in the 1985 legislative session, this bill and similar bills relating to other paramedical personnel will undoubtedly be introduced in subsequent years and consideration should be given by the Commission on Legislation anticipating these. The Reference Committee recommends that Bob Johnson and Lorin Pankratz be commended for all their fine work during the legislative session. The Reference Committee also recommends that the Association continue to endorse voluntary CPR training for high school students. A discussion was held with regard to the Association's opposition to the bill requiring licensure of x-ray technologists. The Reference Committee endorses an outreach training program for these individuals. The Reference Committee recommends the acceptance of this report with the above comments.

The Reference Committee reviewed the report of the Commission on Medical Service. The Reference Committee recommends the acceptance of the report of the Commission on Medical Service.

The following resolutions were presented to the Reference Committee: Resolution #1 — The Reference Committee considered Resolution #1 submitted by the 7th District Medical Society concerning hospital staff privileges for non-doctors of medicine or osteopathy. The Reference Committee recommends that the resolved section be amended as follows:

BE IT RESOLVED, that the South Dakota State Medical Association recommend to the hospitals within the state that full staff privileges and full staff membership for non-doctors of medicine, non-doctors of osteopathy or non-dentists not be granted.

The Reference Committee recommended Resolution #1 be adopted with this change. Resolution #4 — The Reference Committee considered Resolution #4 submitted by the Watertown District Medical Society concerning Blue Cross-Blue Shield Insurance. The Reference Committee recommends that the resolved section be amended as follows:

NOW THEREFORE BE IT RESOLVED: that the South Dakota State Medical Association strongly encourages Blue Cross of Western Iowa and South Dakota to modify their current policy and provide for direct reimbursement to physicians for preparation of such reports and records at a reasonable and customary rate not to exceed the charge for a limited office visit.

The Reference Committee recommended Resolution #4 be adopted with this change.

Respectfully submitted,
REFERENCE COMMITTEE ON REPORTS OF THE COMMISSION ON MEDICAL SERVICE AND THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS
James Rud, M.D., Chairman
John Sternquist, M.D.

Dr. Redmond moved to accept the report of the Reference Committee on Reports of the Commission on Medical Service and the Commission on Legislation and Governmental Relations. The motion was seconded and carried.

Dr. Michael Ferrell read the report of the Reference Committee on Reports of the Commissions on Scientific Medicine; Internal Affairs, Communications and Liaison, and Professional Liability.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF THE COMMISSIONS ON SCIENTIFIC MEDICINE, INTERNAL AFFAIRS, COMMUNICATIONS AND LIAISON, AND PROFESSIONAL LIABILITY

The Reference Committee reviewed the report of the Commission on Scientific Medicine. The Reference Committee recommends approval of the proposed training program for x-ray technologists. The Reference Committee recommends approval of the position to await the report of the blue-ribbon panel established on the state level on nuclear waste before estab-

lishing a position of the State Medical Association. The article on the post-polio syndrome is being prepared and the Reference Committee noted that the information would be submitted to the SOUTH DAKOTA JOURNAL OF MEDICINE. The Reference Committee noted that the report of the CME Accreditation Committee would be received in October. The Reference Committee recommends acceptance of the report of the Commission on Scientific Medicine.

The Reference Committee reviewed the report of the Commission on Internal Affairs, Communications and Liaison. The Reference Committee approved the recommendation to develop a public relations program for the South Dakota State Medical Association with emphasis on the choice of physician, DRG's, and advances in medical technology; that this program be set up using public service time, as opposed to paid advertising, and that the program be established to work through the District Medical Societies so the local physicians may play a part in the ongoing public relations program. The Reference Committee concurs with the recommendation that this program should be a continuing priority of the State Medical Association. The Reference Committee reviewed the financial report of the Health Career Grant Fund Committee and recommends its approval. The Reference Committee reviewed the proposed budget for 1985-1986 for the General Fund, the Building Fund and the Journal Fund. The Reference Committee recommends approval of the proposed budget by the House of Delegates. The Reference Committee recommends the acceptance of this report as a whole.

The Reference Committee reviewed the report of the Commission on Professional Liability. The Reference Committee recommends acceptance of this report and requests that the Commission continue its work in the areas of alternative forms of coverage, spiraling costs and legislative proposals.

The Reference Committee reviewed Resolution #2, concerning the 75th Anniversary of the State Auxiliary. The Reference Committee recommends 100% acceptance of this resolution.

Respectfully submitted,
Michael Ferrell, M.D., Chairman
Charles Monson, M.D.
John Malm, M.D.

Dr. Gere moved to accept the report of the Reference Committee on Reports of the Commissions on Scientific Medicine; Internal Affairs, Communications and Liaison, and Professional Liability. The motion was seconded and carried.

Dr. Tom Krafka read the report of the Reference Committee on Reports of Special Committees and Miscellaneous Business.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF SPECIAL COMMITTEES AND MISCELLANEOUS BUSINESS

The Reference Committee has reviewed and recommends acceptance of reports from the Committee for Continuing Medical Education, the Grievance Commission, the Long Range Planning Committee, the Liaison Committee, the South Dakota Political Action Committee, the Board of Directors of the South Dakota Medical School Endowment Association, the Archives and History Commission, the Impaired Physicians Committee and the Medical-Legal Committee.

The Reference Committee recommends that the resolution submitted by the Council concerning the establishment of an IPA-HMO be amended to read as follows:

RESOLVED, that the Association proceed with the formation of an IPA-HMO of the South Dakota State Medical Association.

The Reference Committee recommends adoption of this resolution as amended.

Respectfully submitted,
Reference Committee on Reports of Special Committees and Miscellaneous Business
Thomas Krafka, M.D., Chairman
Jerome Freeman, M.D.
Jay Bachmayer, M.D.

Dr. Jackson moved to accept the report of the Reference Committee on Reports of Special Committees and Miscellaneous Business. The motion was seconded and carried. Dr. Jackson addressed the House on the importance of carrying a positive attitude to their communities on the establishment of an IPA-HMO.

Dr. Messner administered the oath of office to Dr. Richard Gere, the 1985-86 President. Dr. Gere addressed the House briefly.

Dr. Messner introduced the new officers and councilors and recognized Dr. Saylor for his outstanding service to the Association during the past year.

Dr. Saylor addressed the House of Delegates briefly and presented the presidential medallion to Dr. Gere.

The meeting adjourned at 11:00 a.m.

PRESIDENTIAL OATH OF OFFICE

I SOLEMNLY SWEAR THAT I shall carry out the duties of the President of the South Dakota State Medical Association to the best of my ability. I shall strive constantly to maintain the ethics of the medical profession and to promote the public health and welfare. I shall dedicate myself and my office to improving health standards and to the task of bringing increasingly improved medical care to the people of South Dakota. I shall uphold the Constitution and Bylaws of the AMA and the South Dakota State Medical Association. I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans.

I do solemnly swear that I will discharge the duties of this office to the best of my ability, so help me God.

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REPORT OF THE PRESIDENT AND CHAIRMAN OF THE EXECUTIVE COMMISSION

During the past year it has been my pleasure and privilege to represent the SDSMA at local, state, regional and national levels. I have attended all meetings of the Council and Executive Commission, and have continued to be impressed by the thoughtful and careful deliberations of these groups. They do truly represent the varied interests of our SDSMA. The Executive Commission had a productive meeting with Governor Janklow and his aides, and I'm sure continued cooperation between our Association and state government is imperative to maintain the high level of patient care in South Dakota. The 1985 Legislative Session has concluded with most of the legislation either introduced or supported being passed. Again, we must recognize the incomparable lobbying ability of Bob Johnson.

With AMA Delegate, Jerry Tracy; Alternate Delegate, Bruce Lushbough; and Executive Secretary, Bob Johnson; I attended both the annual and interim AMA meetings. It was quite an experience for me both to watch the deliberations and hearing and also to sit as an Alternate Delegate in the House of Delegates. Our National Federation truly does represent all of medicine. Also, the association of our SDSMA with the North Central Medical Conference does give us, a small state, an opportunity for our wishes to be heard. We also are able to exchange thoughts and solutions to problems with our sister states. The visits to our districts are truly an experience. The hospitality, renewal of friendships and exchange of ideas was most rewarding.

Our Auxiliary has continued to be an active force for us with their regular programs, and particularly through the "Med-Vote" during the 1984 elections.

The Council and Executive Committee have continued our support of the medical school. We have had a very good relationship with Dean Bob Quinn and his staff. The continued cooperation between us will provide a good basis for a long range program.

We have continued our annual meeting with the South Dakota Hospital Association Executive Committee and find we do have good exchanges with them. I hope this will continue. The ad-hoc Medical-Legal Committee is still meeting and hopefully will arrive at some appropriate and meaningful conclusions.

All the functions of the SDSMA are in the capable hands of Bob Johnson and his staff and there is no question that we have the "Best in the Midwest." Again, I say thank you.

Respectfully submitted,
Howard L. Saylor, Jr., M.D.
President and Chairman
Executive Commission

The Reference Committee reviewed the report of the President and Chairman of the Executive Committee and recommended it be accepted as submitted.

REPORT OF THE PRESIDENT-ELECT

As President-Elect of the Medical Association, I have attended all the meetings of the House of Delegates, Council and Executive Commission during the past year. As has been stated many times before, it is gratifying to see the effort put forth by the members of these various bodies of the State Medical Association.

On the regional and national level, I was able to attend the North Central Conference and the AMA Interim meeting. These meetings were very informative, and it is very apparent that the same problems we are concerned with are present regionally and nationally. Hopefully, with continued effort and cooperation these problems can be resolved satisfactorily.

With the aid of our very capable Medical Association staff I am looking forward to serving the South Dakota State Medical Association as President in the coming year.

Respectfully submitted,
R. G. Gere, M.D.
President-Elect

The Reference Committee reviewed the report of the President-Elect and recommended it be accepted as submitted.

REPORT OF THE VICE PRESIDENT

Activity for the Vice President of the South Dakota State Medical Association during the past year has been limited largely to the organizational activities of the governance system with several interesting additions. I have attended all meetings of the Council, and served as a member of the Executive Committee with attendance at all but one of the regularly scheduled meetings and all of those convened for action on special or emergent business. The highlight of the year was the participation in the AMA Interim Meeting as part of the SD delegation, held in Hawaii in December 1984. In addition to this meeting, I participated as a speaker at the SDSMA Medical Seminar conducted as a post-convention event. I also had the pleasure of attending the AMA National Leadership Conference in Chicago, Illinois held in February 1985. I express my appreciation to the Association membership for their confidence in permitting me to occupy this position of leadership.

Respectfully submitted,
W. O. Rossing, M.D.
Vice President

The Reference Committee reviewed the report of the Vice President and recommended it be accepted as submitted.

REPORT OF THE SECRETARY-TREASURER

It is with pleasure that I report to you that the financial base of our Association remains on strong footing. We are still receiving high interest rates from previously acquired investments. Our membership has increased substantially with both active and associate members. We are working on a few projects which should add considerably to our treasury and no dues increases are considered.

This past year I have attended all of the Council and Executive Committee meetings, as well as, meeting with the South Dakota Hospital Association. I have also maintained my position on the Liaison Committee with the State Health Department.

We are looking forward to another successful year under the leadership of the Council, our next President, and our Executive Secretary.

Respectfully submitted,
M. G. Thompson, D.O.
Secretary-Treasurer

The Reference Committee reviewed the report of the Secretary-Treasurer and recommended it be accepted as submitted.

REPORT OF THE CHAIRMAN OF THE COUNCIL

During the year 1984-85, the Council of the South Dakota State Medical Association met at regularly scheduled intervals and the topics discussed continue to reflect the outside influences affecting physicians practicing in the state of South Dakota. We will continue to be faced by these influences such as DRG's, PPO's, HMO's and the bureaucratic influences on the practice of medicine as regards patient care.

A great deal of this work has been and continues to be accomplished by the commissions and their respective chairmen who must be commended for their accomplishment of a great deal of very difficult work.

Again, we were represented in absolutely superior manner by our Executive Secretary, Robert Johnson, and his very capable and hard working staff. I personally wish to thank them very much, as does the entire Council.

Respectfully submitted,
Robert L. Ferrell, M.D.
Chairman, Council

The Reference Committee reviewed the report of the Chairman of the Council and recommended it be accepted as submitted.

REPORT OF THE AMA DELEGATE

It once again has been my pleasure to represent the South Dakota State Medical Association at the Interim and Annual meetings of the American Medical Association in July and December of 1984. The meetings have been of particular importance in the past year because of the many issues facing the

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Contraindications: Severe left ventricular dysfunction (see *Warnings),* hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (except in patients with a functioning artificial ventricular pacemaker), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g., ejection fraction < 30% or moderate to severe symptoms of cardiac failure) and in patients with any degree of ventricular dysfunction if they are receiving a beta blocker. (See *Precautions.)* Patients with milder ventricular dysfunction should, if possible, be controlled with optimum doses of digitalis and/or diuretics before ISOPTIN is used. (Note interactions with digoxin under *Precautions.*) ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild and controlled by decrease in ISOPTIN dose). Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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arena of modern medicine today. It is still the stand solidly of the AMA that the proper approach to medicine is private free enterprise practice of medicine, but without ignoring the emergence of HMOs, PPOs and all the other varieties of health care delivery services that are on the market and available today. As your delegate I also attended all of the council meetings and executive meetings of the SDSMA.

Copies of the major items of the AMA meetings have been sent to each member of the SDSMA. Once again thank you for the privilege of being able to represent South Dakota and to reiterate the importance of complete involvement of physicians in their local and state medical societies and certainly the American Medical Association.

The large body of membership in the AMA gives us the thrust that is important for continuing to fight for the rights of our patients and ourselves. The AMA is the most forceful tool that we have in our behalf. The AMA represents us well and is certainly fighting the battle where the current arena seems to be constantly, and that is in the halls of Congress.

Respectfully submitted,
G. E. Tracy, M.D.
Delegate to the AMA

The Reference Committee reviewed the report of the AMA Delegate and recommended it be accepted as submitted.

REPORT OF THE AMA ALTERNATE DELEGATE

I have attended meetings of the Council and Executive Commission held during the past year. I have also attended the annual and interim meetings of the American Medical Association in 1984 and the North Central Medical Conference in November 1984.

I am currently serving on the Manpower Committee of the North Central Medical Conference.

As changes face us in the near future in how we will be able to practice medicine, it is essential that all physicians remain active in our State Medical Association as well as the American Medical Association.

Respectfully submitted,
Bruce C. Lushbough, M.D.
AMA Alternate Delegate

The Reference Committee reviewed the report of the AMA Alternate Delegate and recommended it be accepted as submitted.

REPORT OF THE SPEAKER OF THE HOUSE

I am looking forward to presiding at the upcoming meeting of the House of Delegates at the State Medical convention in Sioux Falls.

I appreciate the help and support of the people responsible for the preparation of this meeting. I particularly wish to thank all the physicians who have agreed to participate in the reference committees and especially the chairmen of those committees.

The active participation through the reference committee system is important to the issues and both enhances and speeds the work of the House of Delegates.

As Speaker of the House I have attended the scheduled Council meetings and participated with the Executive Commission.

Respectfully submitted,
Frank D. Messner, M.D.
Speaker of the House

The Reference Committee reviewed the report of the Speaker of the House and recommended it be accepted as submitted.

REPORT OF THE COUNCILOR AT LARGE

I have attended meetings of the Council and with one exception of the Executive Committee during the past year.

It has been my pleasure to serve the membership in the capacity of Councilor at Large.

Respectfully submitted,
Joseph N. Hamm, M.D.
Councilor at Large

The Reference Committee reviewed the report of the Councilor at Large and recommended it be accepted as submitted.

REPORT OF THE EXECUTIVE SECRETARY

I had the privilege of accompanying Dr. Saylor on most of his visits to the district medical societies this year. It is always a high point for me to join your President at these meetings to hear and share your thoughts about the practice of medicine and to enjoy your hospitality.

During this past year, all of our Commissions and Committees have been diligently at work conducting the business of the Association. Their work never seems to diminish and for their efforts each chairman and member deserve our special thanks.

I would like to make note of some particular work done on your behalf this past year. The Commission on Internal Affairs, Communications and Liaison has assumed the monumental task of directing a public relations campaign about and for physicians. The Professional Liability Commission is currently evaluating various proposals for much needed tort reform. The Medical/Legal Committee introduced an Interprofessional Code for Physicians and Attorneys endorsed by both the Medical Association and the State Bar Association. All of these efforts are for the betterment of medicine and I encourage all of you to individually and collectively support these Commissions and Committees in their endeavors.

The 1985 Legislative Session proved to be both difficult and exhausting. There were several regulatory bills introduced on behalf of the Health Department, one in particular wanting to establish a Health Data Commission. These bills were defeated; however, we can probably expect similar legislation in 1986. The optometrists were certainly tenacious opponents. They organized early on, got early commitments from some legislators and spent a good deal of time and financial resources to promote their cause. It was through the combined efforts of strong legislators who support medicine; physicians, their spouses and clinic managers who reacted when called upon, and the lobbying effort in Pierre that this bill and others were defeated. What is important to keep in mind is that next year, as in years past, there will be similar legislation and we must prepare for it now. We must not become complacent either offensively or defensively. Working together in a united and energetic manner, medicine will continue to be heard.

Nationally we are experiencing the same sort of intrusive behavior and proposals. DRG's are well in place nationally and the results are apparent to everyone. The significance of organized medicine's voluntary fee freeze escaped the federal bureaucracy as they instituted the mandated Medicare fee freeze and will most likely extend the original 15 month freeze period. Each and everyone of you is to be commended for your commitment to your patients in spite of continued government interference. What is comforting, and not surprising, is that your patients continue to believe in you and the excellent service you provide for them.

This next year will be a challenging one for medicine at both the state and national level. I know this is an often repeated concern; however, it is one that will not go away. There are many who would like to lay the burden for the rising cost of health care at the feet of the physician and it is that philosophy we must combat. This is an off-year for elections and a year in which we can generate interest and enthusiasm through continued support of your district, state and national association activities. Continue to contact legislators to thank them for their support and to voice medicine's concerns. Become even more active at all levels and support SoDaPAC and its efforts on behalf of medicine. Your efforts have been splendid in the past and we can expect no less for the future.

Again I am pleased to announce that the Association is maintaining a strong financial position. Through the able leadership of your officers, councilors and committee members your Association continues to grow in membership and financial strength. We hope to continue in this fashion and it will only happen with every member's commitment and involvement.

There have been several staff changes at the executive office this past year. Susan Jahraus joined our office in September 1984 as the primary word process operator. Beth Erickson joined in March 1985 to replace Dee Knobel who retired after 7 years with the Association. Thank you Dee for your years of

excellent service to the Association and welcome to Susan and Beth.

The officers and councilors you elected continue to represent medicine's best interests as individual physicians and as an association at the local, state and national level. They are to be commended for all of their efforts.

It is only proper to conclude my remarks by acknowledging my most heartfelt appreciation for Dr. Howard Saylor, Jr., your President. He is to be commended for his enthusiasm for the office and dedication to the ideals of medicine. A most sincere thank you to Dr. Saylor and his lovely wife Mary Ann from all of us.

Respectfully submitted,
Robert D. Johnson
Executive Secretary

The Reference Committee reviewed the report of the Executive Secretary. The Committee would also like to recognize the superb and outstanding work and ability of our Executive Secretary, Robert Johnson, and his staff during this past year in conducting the business of the South Dakota State Medical Association.

REPORT OF THE FIRST DISTRICT COUNCILOR

The First District Medical Society held regular monthly meetings during the 1984-1985 season. The September meeting featured Dr. Gary Tollefson from the University of Minnesota, Department of Psychiatry, speaking on "Manic-Depressive Reaction." In October Dr. Michael Levitt from the VA Hospital in Minneapolis spoke on "Intestinal Gas and Flatus." The November 7th meeting featured Dr. Howard Saylor, the State President of the Medical Society, discussing recent political, legal and malpractice situations in South Dakota.

A Christmas party was held at the home of Dr. Albin Janusz and no speaker was in attendance. The February speaker was Dr. Redmond discussing dermatological problems. In March, Dr. Thomas Luzier spoke on "Asthma and Allergies."

The newly elected officers are as follows:

President: Dr. Warren Redmond
Vice-President: Dr. Joel Huber
Secretary-Treasurer: Dr. Phyllis Heinemann

Respectfully submitted,
J. A. Eckrich, Jr., M.D.
G. H. Steele, M.D.
Councilors, First District

The Reference Committee reviewed the report of the Councilors from the First District Medical Society and recommended it be accepted as submitted.

REPORT OF THE SECOND DISTRICT COUNCILOR

The Second District met at monthly intervals from September through May as described in the bylaws. We were honored at one of our fall meetings by the presence of the President of the South Dakota State Medical Association, Dr. Howard Saylor, Jr., and the Executive Secretary, Mr. Robert Johnson, for their annual visitation.

Other monthly meetings included discussions of socio-economic factors affecting medicine and medical topics of interest to the group. Attendance was excellent during the year with reports being generated by members of the District who participate in other activities of the State Medical Association as well as allied group.

Officers elected for the 1985 year include Dr. Clark Likness of Watertown as President; Dr. Douglas Traub of Watertown as Vice-President; Dr. Gerald Tracy as Secretary.

Respectfully submitted,
James C. Larson, M.D.
Councilor, Second District

The Reference Committee reviewed the report of the Councilor from the Second District Medical Society and recommended it be accepted as submitted.

REPORT OF THE THIRD DISTRICT COUNCILOR

The Third District has continued to have regular meetings with the district holding the following meetings:

The meeting of April 21, 1984 was held in Brookings. The regular business meeting was held with presentation and round table discussion on "The Future of Medicine as Viewed From the Management Point of View and Business Administrator Point of View."

The June 14th meeting was held in Madison. A regular business meeting was held. The problem of "Neonatal Obstetrical Recommendations or Care" presented by Dr. Fenton was discussed. Dr. Fenton's presentation was given.

The meeting of August 16th was held in Brookings. Again the neonatology and obstetrical care problems were discussed. A regular business meeting was held. "Acute Neurological Emergencies" was presented in a talk by Dr. Jerry Freeman.

The October 11th meeting was held at Pat & Carroll's supper club in Lake Preston, SD. Chuck Schultz, hospital administrator, welcomed everyone. It was announced that there would be an open house for Dr. Scheller on October 14th from 2:00 to 4:00. Dr. Baltodano reviewed the psychology of water balance in the elderly. A regular business meeting was held. Dr. Goepfert asked the South Dakota Medical Association to address the problem of mental health clinics and their operation in regard to psychiatry and psychologists, their licensing and their abilities. This was passed to the Executive Committee of the Medical Society.

The meeting of December 14, 1984 was held in Flandreau. Dr. Saylor, President of the South Dakota State Society, and Bob Johnson were present and gave an update on the situation of the state. A regular business meeting was held. At this December meeting Tad Jacobs was nominated for President, Rick Holm for Vice President and M. Venugopal for Secretary-Treasurer.

Respectfully submitted,
Curtis H. Wait, M.D.
Councilor, Third District

The Reference Committee reviewed the report of the Councilor from the Third District Medical Society and recommended it be accepted as submitted.

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REPORT OF THE FOURTH DISTRICT COUNCILOR

The Fourth District Medical Society's annual meeting was held on January 19, 1985 at the Pierre Elks Club. In addition to the members present, the special guests were Dr. Howard Saylor, Jr., President of the South Dakota State Medical Association, Mr. Robert Johnson and Lorin Pankratz from the Executive Office. Other special guests included four Public Health physicians from Eagle Butte, Drs. VanMeeter, Matheney, Akberzie and Bartelson.

Election of officers was held and Dr. R. J. Owens was re-elected President. Dr. Huber was elected Vice President and Dr. Cosand, Secretary-Treasurer. Dr. Huber was elected as Delegate and Dr. Lindbloom as Alternate Delegate.

It was voted to continue the $250 scholarship for a deserving student in the allied health fields from the counties of Sully, Hughes, Lyman, Jones and Stanley. The award was made last year and was very well received by the community. The president, vice president and Secretary will be the committee of three to choose the recipient.

The remainder of the meeting was devoted to remarks from Dr. Saylor, Robert Johnson and Lorin Pankratz.

Once gain, this year the District in cooperation with the Inservice Education Department of St. Mary's Hospital had a series of CME meetings:

01-17-84 — "Arthritis Update" by Dr. Scott Kale
01-21-84 — "Care of the Burn Patient" by Lynn Solem
03-20-84 — "AIDS and Related Infections" by Dr. David Ohrt
05-15-84 — "Hypertension in Renal Disease" by Dr. L. Ra Raij
07-24-84 — "Vascular Reconstruction" by Dr. Dean Borth
08-18-84 — "What's New in Diabetes" by Dr. Stephan Haas
09-18-84 — "CT Scanning, Clinical Applications" by Dr. Dai Park
11-20-84 — "Septic Shock" by Dr. Humphreys

Respectfully submitted,
R. C. Jahraus, M.D.
Councilor, Fourth District

The Reference Committee reviewed the report of the Councilor from the Fourth District Medical Society and recommended it be accepted as submitted.

REPORT OF THE FIFTH DISTRICT COUNCILOR

The Huron District gained two members this year. Dr. Jack Robbins, Urologist, and Dr. Mark Hendricks, Internist, began practice in Huron in 1984. They balanced our loss of Dr. Bernie Heilman to Pierre and Dr. Fred Schneider to Montana. Drs. Paul Tschetter and Emil Hofer of Huron both retired. Dr. Hofer had been Secretary-Treasurer for nearly 17 years to the Huron District.

New officers during this year are:

President — Dr. Tom Dean
Vice-President — Dr. Geo. Nicholas
Secretary-Treasurer — Dr. Ted Hohm

The quarterly meetings have the usual flavor with President Howard Saylor's official visit during the fall of 1984 and several scientific programs.

The highlight of our year was the donation of $2,000 to the Medical Endowment Fund. We would like to challenge other Districts to equal our gift.

Respectfully submitted,
David Buchanan, M.D.
Councilor, Fifth District

The Reference Committee reviewed the report of the Councilor from the Fifth District Medical Society and recommended it be accepted as submitted.

REPORT OF THE SIXTH DISTRICT COUNCILOR

The Sixth District of the South Dakota State Medical Association met on a regular basis the past year.

The District met on August 8, 1984 at the Firesteel Restaurant and Lounge. After dinner there was a brief business meeting and the following decisions were made. With the departure of Dr. Tim Judge, Dr. Silvagni took over the duties of president and Dr. Visani took over the secretarial duties for the remainder of the year. Elections were held for a new president and secretary. Dr. Sandro Visani was elected as new president, his term due to start in 1985. Dr. Ronald Hansing was elected as secretary and his duties likewise will start in 1985. It was also decided that if there is a meeting of the society, it is understood that the wives will always be invited. Following the brief business meeting, Dr. Sam Heth presented a scientific program on a case of Fetal Hydrops.

The District met again on October 18, 1984 at the Elks Lodge. After dinner there were talks by the SD Medical Association President, Dr. Howard Saylor, and the SD Medical Association Executive Secretary, Robert Johnson. The talks were informative and revolved mostly on recent government intervention in the practice of medicine.

The District met again on January 16, 1985 at the Holiday Inn. After dinner, a brief business meeting was held and Dr. Silvagni was elected president of the society for 1985 and Dr. Sam Heth was elected secretary. Following that, Dr. Elson talked on South Dakota colon-rectal cancer screening program.

Dr. Virginia Johnson gave an interesting presentation on genetics at the April 17, 1985 meeting.

Each meeting had a good representation of members and various members shared interesting and/or unusual case-histories from their practices. The meetings also included the usual social and relaxation aspects, with spouses invited and included.

Respectfully submitted,
Charles D. Monson, M.D.
Councilor, Sixth District

The Reference Committee reviewed the report from the Councilor for the Sixth District Medical Society and recommended it be accepted as submitted.

REPORT OF THE SEVENTH DISTRICT COUNCILORS

1985 District 7 President: Jeff Hagen, M.D. (Pathology)
1985 District 7 Secretary: C. Roger Stoltz, M.D. (Obstetrics-Gynecology)

Together these gentlemen are providing us with capable and able leadership as we pass into the year of 1985, which will prove a very challenging year for the practice of medicine, both politically and economically.

The 1984 7th District President was Rodney Parry, M.D. (Pulmonary Medicine), and Secretary was Jerome Freeman, M.D. (Neurology).

According to statistics compiled by the Executive Secretary's Office of the State Medical Association, our current 1985 membership in 7th District is 280. The appropriate officer's names for the Executive Committee of the Council, the House of Delegates, including alternates, are listed in other sections of this publication. Communities included in the 7th District are Bridgewater, Canton, Colton, Dell Rapids, Freeman, Salem, Sioux Falls, Valley Springs and Viborg. Current hospital administrators in these District 7 communities are as follows: Canton — John Devick; Dell Rapids — Donald Olson; Freeman — Larry Ravenburg; Sioux Falls — Crippled Children's Hospital and School — E. B. Morrison, Ph.D.; McKennan Hospital — Roger Paavola; Sioux Valley Hospital — Lyle Schroeder; Veteran's Administration Center — Dexter D. Dicks; Viborg — Warren Kuhler. District 7 Hospital Chief's of Staff, using information from the Executive Secretary's office of the State Medical Association for 1985 are as follows: Canton — Eugene Regier, M.D., Family Practice; Dell Rapids — K. Greg Peterson, M.D., Pathology; Freeman — Dennis Epp, M.D., Family Practice; Sioux Falls — Crippled Children's Hospital and School — Robert E. VanDemark, Sr., M.D., Orthopedics; McKennan Hospital — Gerald Loos, M.D., Family Practice; Sioux Valley Hospital — Guy E. Tam, M.D., Family Practice; Veteran's Administration Center — R. O. George W. Wyatt, M.D., Ob/Gyn; Viborg — Earl Nelson, M.D., Family Practice.

Meeting times for District 7 are in the months of September through May and fall on the first Tuesday of every month.

Activities concerning, and relevant to the 7th District Attention and Action during the recess, in the months of June, July and August, are conducted by the 7th District Board of Directors at the discretion and approval of the general membership.

Meeting location for District 7 has, for many years, been held at the Westward Ho Country Club in Sioux Falls, with one notable exception; for the past several years, at the personal invitation of Theodore Angelos, M.D., Family Practice, the October meeting has been held at the Canton Country Club, which includes pre-meeting recreational activities on the golf course, and a sumptuous pheasant banquet provided through the generosity of Dr. Angelos, which is served homestyle, and includes all the conceivable amenities. The October meeting also includes liaison reports from the medical school, and is a Town and Gown session of conciliation, fellowship and goodwill. This meeting is traditionally well attended, and is looked forward to, from year to year, by the general membership of the 7th District.

Specifics involving the activities of the 7th District, during the meetings throughout the year, are recorded in the monthly minutes of the 7th District Medical Society and are available for perusal by any member in any district of the South Dakota State Medical Association. They will not be reiterated here. Meeting minute copies can be obtained by contacting either Dr. Jeff Hagen or Dr. C. Roger Stoltz. There are two annual meetings traditionally devoted to the presentations from South Dakota State Medical Association Executive Secretary, usually occurring after the close of the State Legislative Session, as an update on legislative activities concerning medicine that were encountered during the legislative session, and a second meeting devoted to presentation by the President of the South Dakota State Medical Association. These meetings are always well attended and are looked forward to by the general membership.

The District 7 general membership concensus reflects the sentiment that our Executive Secretary, Robert Johnson, continually and consistently demonstrates exemplary conduct in carrying out his duties and responsibilities. For the past several years, the 7th District has also hosted two special meetings during the year. In early December there is a meeting in which the 7th District hosts the regional State Representatives, Senators and their spouses to dinner, after which they are invited to comment on the upcoming State Legislative Session and given the opportunity for concerns of a political nature to be voiced by the 7th District Membership. It gives everyone an opportunity to share common concerns and to alleviate potential barriers in communication between ourselves and our legislators, and opens up avenues of communication that can be utilized, if necessary, during legislative session. The second meeting is one in which the 7th District hosts a get together for the members of the Sioux Falls Chamber of Commerce. This meeting has been very valuable in that it has provided a bridge between the medical community and the business community, and is a meeting in which, again, common concerns can be shared and potential barriers in communication between the medical community and the business community can be alleviated.

The 7th District membership would like to congratulate Dr. Howard Saylor on his effective presidency and leadership of the State Medical Association for this past year. Dr. Saylor has demonstrated consummate skill and wisdom in discharging his responsibilities and duties in this challenging era in which medicine finds itself today.

The 7th District membership is pleased and honored, once more, to be the hosts of the annual State Medical Association meeting, and our membership will be available to any of you who are visitors to our fine community, to help in any way to make your stay in Sioux Falls and the State Medical Association meeting, a successful and enjoyable experience for you and your loved ones.

Respectfully submitted,
Michael Pekas, M.D.
John Ochsner, M.D.
Richard Tschetter, M.D.
Lowell Hyland, M.D.
Richard Gunnarson, M.D.
Councilors, Seventh District

South Dakota Society Of Pathologists

Officers for 1985-86

John F. Barlow, M.D., President
Tom C. Johnson, M.D., Vice President
Jerry L. Simmons, M.D., Secretary-Treasurer

The Reference Committee reviewed the report from the Councilors for the Seventh District Medical Society and recommended it be accepted as submitted.

REPORT OF THE EIGHTH DISTRICT COUNCILOR

The District VIII Medical Society met three times during the 1984-85 year. The first meeting was held October 23, 1984. This was called to order by the President, Dr. Herb Saloum. At that meeting Dr. David Potas was accepted into the District as a member, as was Dr. J. Carey Laporte, Jr., who is an associate of Dr. C. J. Vlach in Hartington, Nebraska. There was discussion by Dr. Jay Hubner who reviewed the action by the Council at their September meeting. There was considerable discussion concerning whether or not the physicians of the state should be participants or nonparticipants in the Medicare program. The majority feeling at the meeting was that the physicians should be nonparticipants in the program, and it was noted that the Council will be spending a considerable amount of money in the near future in public relations in this regard. There being no further business, the meeting was adjourned.

District VIII was again called to order by Dr. Herb Saloum, the District President, on November 6, 1984. A report from the treasurer at that time was duly noted. The topic of out-of-state M.D.'s wishing to be members of District VIII was brought up. Dr. Saloum informed the membership that if these M.D.'s are members of the AMA they may simply pay dues and join the South Dakota State Medical Association and attend the District VIII meetings.

The District Medical Society moved to give $500.00 to the Yankton Area Health Education Fund.

Dr. Pullen moved to have Dr. Dale Gunderson check into videotaping Dr. Chester McVay's surgery lectures and to go ahead with it if approved by the District VIII Executive Committee.

The District VIII was again called to order by President Dr. Herb Saloum on February 20, 1985, at which time Dr. Howard Saylor, President of the South Dakota State Medical Association, gave an outstanding address to the group.

Also at this meeting recognition awards were presented by Dr. Saylor to Dr. Jay Hubner who is Chairman of the Commission on Internal Affairs and also a Certificate of Appreciation was presented to Dr. Morris Radack for his work with the Commission on Professional Liability.

Also, nominations were made for councilor and alternate councilor to the South Dakota State Medical Association. Dr. Richard I. Porter was nominated for councilor and Dr. John Sternquist was nominated for alternate councilor.

Delegates were Dr. Robert Foley of Tyndall, Dr. Jon Flom of Yankton, and Dr. Morris Radack of Yankton. Alternate delegates were Dr. David Smith of Yankton, Dr. William Dendinger of Vermillion, and Dr. Dale Gunderson of Yankton. Also, there was a nomination that Dr. Richard I. Porter be on the Nominating Committee.

At that time Dr. Steven Krause, dermatologist from Yankton, South Dakota, Dr. C. J. Vlach and Dr. J. Carey Laporte, family physicians from Hartington, Nebraska were approved membership within the Society.

Respectfully submitted,
R. I. Porter, M.D.
J. W. Hubner, M.D.
Councilors, Eighth District

The Reference Committee reviewed the report from the Councilors for the Eighth District Medical Society and recommended it be accepted as submitted.

REPORT OF THE NINTH DISTRICT COUNCILORS

During the past twelve months, the Black Hills District has met five times, as follows:

May 10, 1984 — discussion of legislative and other issues confronting medicine, led by SDSMA President Joseph Hamm, SDSMA Executive Secretary Robert Johnson, and State Senator Don Frankenfeld.

September 27, 1984 — official presidential visit by SDSMA President Howard Saylor and Executive Secretary Johnson, immediately following Mr. Johnson's recognition by the South Dakota Hospital Association.

November 8, 1984 — business meeting with introduction of new members.

December 11, 1984 — annual Christmas party with spouses. Entertainment by 4077 T.R.A.S.H.

February 12, 1985 — Dr. Robert Ferrell, Councilor, spoke on "The Future of Medicine in South Dakota," reporting on the January Council meeting.

We have scheduled another meeting for May 9, 1985, shortly before the SDSMA annual meeting.

Our 1984-85 SDSMA membership directory shows the District as having 137 active members and 13 honorary members. Since its publication, we have added 18 new members, and 5 more applications are still being processed. Drs. John Elston and Gordon S. Owen have recently retired and changed to honorary membership.

Officers in our District Medical Society are elected on a calendar year basis, and the officers for 1985 are:

President	Robert Allen, M.D.
Vice-President	J. Geoffrey Slingsby, M.D.
Secretary-Treasurer	N. R. Whitney, M.D.
Councilors	Robert Ferrell, M.D.
	James Jackson, M.D.
	Ed James, M.D.
Alternate Councilors	Thomas Krafka, M.D.
	N. R. Whitney, M.D.

On June 2, 1984 the District sustained a sad loss in the death of Conrad F. J. Blunck, M.D. In addition to his very active orthopedic practice, Dr. Blunck had been actively engaged in developing and testing a new generation of hip implant, and therefore the School of Mines has established The Conrad F. J. Blunck Memorial Fellowship in biomedical engineering. The District subsequently contributed to this memorial.

In January, a problem arose that has concerned many of us in the District. Following the death of a child, due to an overwhelming illness, at the Pine Ridge USPHS Hospital, certain members of the American Indian Movement living in Rapid City expressed very belligerent and completely unwarranted criticism of medical care at Pine Ridge. By now the furor has apparently subsided, but at the time, the atmosphere was so hostile that the Public Health Service physicians considered themselves in physical danger and threatened to resign. Since the Pine Ridge Hospital certainly has a staff of young well-trained and well-qualified physicians working under very difficult conditions, we hope that this situation will be resolved without further criticism of the professional staff, both for the sake of the physicians and for the sake of the people for whom they care.

Respectfully submitted,
Robert Ferrell, M.D.
James Jackson, M.D.
Ed James, M.D.
Councilors, Ninth District

The Reference Committee reviewed the report from the Councilors for the Ninth District Medical Society and recommended it be accepted as submitted.

REPORT OF THE TENTH DISTRICT ALTERNATE COUNCILOR

The Rosebud District Medical Society held their annual meeting in January 1985 in Winner, South Dakota. Newly elected and installed officers for the coming year included:

President	Mary S. Carpenter, M.D.
Vice-President	Melanie Ann Webb, D.O.
Secretary-Treasurer	Tony L. Berg, M.D.
Delegate	John A. Malm, M.D.
Alternate Delegate	Tony L. Berg, M.D.
Councilor	Louis H. Hogrefe, M.D.
Alternate Councilor	R. Gene Nemer, M.D.

Present for the program was Dr. Howard Saylor extending his presidential visit.

Respectfully submitted,
R. Gene Nemer, M.D.
Alternate Councilor,
Rosebud District Medical Society

The Reference Committee reviewed the report from the Councilor for the Tenth District Medical Society and recommended it be accepted as submitted.

REPORT OF THE ELEVENTH DISTRICT COUNCILOR

During the past year, six meetings of the Eleventh District Medical Society were held. At these meetings, business sessions were conducted as needed. The scientific sessions were presented by the following consultants:

1. April 19, 1984 — Dr. Derek Oldenburger, Rheumatologist from Bismarck, North Dakota presented a session on "The Update of Nonsteroidal Treatment."
2. September 20, 1984 — Dr. Douglas R. LeBrecque from the University of Iowa presented a session on "Hepatitis B Virus Infection: Implications for the Health Care Professional."
3. October 18, 1984 — Dr. Paul Carpenter from Central Plains Clinic in Sioux Falls, South Dakota spoke on "Acute Intervention in Cardiac Disease." This was followed by a discussion by Dr. Jim Reynolds on "A Coronary Artery Bypass Update of 1984."
4. January 1985 — The annual meeting with the SDSMA President and Executive Secretary of the South Dakota State Medical Association was held in Mobridge, discussing upcoming legislation with regard to the medical profession.
5. January 24, 1985 — Dr. Charles VanValkenburg presented a session on diagnosis and treatment of "Panic Disorders."
6. March 21, 1985 — Dr. Virginia Johnson, Professor of Medical Genetics at the University of South Dakota School of Medicine, presented a discussion on "Prenatal Diagnosis."

At the annual meeting of March 5, 1985, new officers for the society were elected and are as follows:

President	Ben Henderson, D.O.
Vice President	J. D. Collins, M.D.
Secretary	L. M. Linde, M.D.
Delegate	J. D. Collins, M.D.
Alternate Delegate	L. M. Linde, M.D.
Councilor	James Wunder, M.D.
Nominating Committee Member	James Wunder, M.D.

Respectfully submitted,
James F. Wunder, M.D.
Councilor, Eleventh District

The Reference Committee reviewed the report from the Councilor for the Eleventh District Medical Society and recommended it be accepted as submitted.

REPORT OF THE TWELFTH DISTRICT COUNCILOR

During 1984-85, the Whetstone Valley District Medical Society met twice. The first meeting was in September and it was held in Victor, South Dakota. The guest speaker was Panjini Sivanna, M.D., anesthesiologist from St. Luke's Hospital, Fargo, North Dakota. He gave an excellent presentation on the use of blood transfusion and plasma and also on shock.

The next meeting was held at Milbank, South Dakota in November and at that time Dr. Robert VanTassel was the guest speaker, who talked about coronary artery disease, calcium channel blockers and angioplasty.

The spring meeting which we are supposed to have in April, we have not had yet as of the time of this report, so I am unable to report about the meeting.

Respectfully submitted,
Joseph Kass, M.D.
Councilor, Twelfth District

The Reference Committee reviewed the report from the Councilor for the Twelfth District Medical Society and recommended it be accepted as submitted.

Family Practitioner

Marshfield Clinic Department of Family Medicine is seeking a BE/BC family practitioner for a new position. The physician joining the Clinic's expanding 5 member department will enjoy the support of one of the nation's largest multispecialty groups, share the philosophy of family oriented care with a preventive focus, and enjoy full hospital privileges but without the distractions of OB or surgical responsibilities. Marshfield Clinic offers an excellent salary plus extensive fringe benefits.

Please send curriculum vitae and the names of several references to:

E. Grady Mills, M.D.
Family Medicine Dept. Chairman
Marshfield Clinic
Marshfield, WI 54449
Phone: collect: (715) 387-5168

VERSATILE SURGEON

wanted to complement aggressive family practice group in rural northeastern Minnesota resort community. Well equipped 40 bed hospital with proven surgical practice volume. Outstanding outdoor recreational opportunities with time off to enjoy it. Reply with CV to:

E. Johnson
Ely Medical Center, Ltd.
224 East Chapman Street
Ely, MN 55731
Telephone 218-365-3151

SOUTH DAKOTA ACADEMY OF FAMILY PHYSICIANS
3001 South Holly Avenue
Sioux Falls, SD 57105

Training Program on Flexible Fiberoptic Sigmoidoscopy for Family Physicians

The American Academy of Family Physicians (AAFP) and the American Society for Gastrointestinal Endoscopy (ASGE) have embarked in an effort to provide training in flexible fiberoptic sigmoidoscopy for family physicians. The training program will include a home study package for the physician's personal use prior to participating in a mandatory preceptorship. The home study package is being developed which will include a monograph, photo atlas and reference list.

The home study package may only be utilized in conjunction with a mandatory preceptorship which will provide training on either the 35 cm or 60 cm scope. Each family physician participating in this course will be required to complete a minimum of 10 supervised procedures if training occurs on the 35 cm scope, or 15 supervised procedures if training occurs with the 60 cm scope.

This project will be available to AAFP members in 1985.

Reception in Anaheim

The South Dakota Academy of Family Physicians has offered support to a USD School of Medicine Alumni Foundation Reception, scheduled at the Anaheim Marriott, Friday, October 11, 1985, during the annual meeting of the American Academy of Family Physicians. This reception for SDAFP members and USDSM Alums from the Los Angeles area and those attending the national meeting, will begin at 5:00 P.M.

Alumni Foundation President William J. Dendinger, M.D. of Vermillion, President-elect Bruce C. Lushbough, M.D. of Brookings, and Alumni Director L. H. Amundson, M.D. of Sioux Falls will be in attendance at this reception throughout the evening.

All SDAFP members attending the national meeting in Anaheim this fall are invited and encouraged to attend this event.

Prescribed Credit vs. Category I Credit

Explanation: In the early years of the American Academy of Family Physicians, the designated terms for approved continuing medical education courses/programs were Category I and Category II. To avoid confusion with the "later" American Medical Association categories, the Academy changed its terminology to "Prescribed" and "Elective," with the wish to differentiate its **programmatic** approval from the AMA's **institutional** approval.

PRESCRIBED CREDIT (AAFP) is defined as the credit awarded for EACH program which has family practice (Academy member) input to assure relevance to family practice and for which sponsors/producers have obtained approval from the AAFP Commission on Continuing Medical Education **prior** to the program date.

CATEGORY I (AMA) has the definition: "An activity can be designated AMA Category I if it is provided or cosponsored by an institution or organization accredited for continuing medical education by ACCME or by a state medical society . . . " (ACCME is the acronym for the Accreditation Council for Continuing Medical Education.)

Basically, the difference between AAFP **Prescribed credit** and the AMA **Category I credit** is that **EACH** AAFP course/program has family practice input to assure that the program is relevant to family practice and is individually reviewed by the COCME; the AMA Category I credit is awarded through an **institution** which offers acceptable continuing medical education.

For any program offered by an **institution** accredited by the ACCME, an Academy member is automatically eligible for AAFP **Elective** credit. Only those programs **individually** reviewed and approved for Prescribed credit by the AAFP COCME, and/or through its regional advisors, are entered as Prescribed credit on a member's record.

AAFP Definition of Continuing Medical Education

The following AAFP definition of continuing medical education was developed by the Commission on Continuing Medical Education and approved by the Board of Directors:

"Continuing medical education is that process within the scope of family practice which provides information and activities designed to maintain and improve the ability of the family physician to provide high quality patient care.

"This educational process encompasses all the areas usually encountered by the family physician necessary to carry out these responsibilities."

SoDaPAC is you and you are SoDaPAC! Without your financial support there would not be a SoDaPAC and it would be much more difficult to have the views and professional goals of medicine relayed to our legislators. The SoDaPAC Board of Directors wants you to be informed of the activities they are involved in on your behalf. With that in mind, SoDaPAC will periodically use a page in the *South Dakota Journal of Medicine* to advise you of their efforts and to solicit the needed financial support of all physicians and spouses.

A very special "thank you" goes to Nathaniel Whitney, M.D., for serving as Chairman of the SoDaPAC Board the past two years. His devotion to the ideals of medicine were most apparent in his efforts to maintain SoDaPAC as a strong voice for medicine. Under his direction, SoDaPAC held a luncheon at the SDSMA Annual Meeting in Sioux Falls and invited six potential gubernatorial candidates as guests. The luncheon was a success and will probably become an annual event. Please make plans to attend the next one.

At the SoDaPAC Annual Board Meeting in June, the following officers were elected to two year terms: Mrs. Marlys Porter, Yankton, Chairman; R. I. Porter, M.D., Yankton, Chairman Elect; Mr. Les Kinstad, Sioux Falls, Vice-Chairman; and Mrs. Marie Hovland, Aberdeen, Secretary. Congratulations to all of you!

There are currently 19 physician members, 7 auxiliary members and 1 clinic manager on the SoDaPAC Board. There are vacancies for both physician and auxiliary members that we hope to have filled in the next few months. If you are asked or have an interest, please consider being appointed to this exciting and necessary organization.

In 1984, SoDaPAC contributed to 56 state legislative candidates and only 9 were defeated. This gives us a success rate in excess of 80%! We need to continue these efforts in the future and not fall behind in a non-election year. As of May 31, 1985, SoDaPAC was ranked *14* in AMPAC membership compared to the other states. Keep up the good work! Your support is needed at both the state and national levels. PLEASE ACT NOW! SODAPAC WILL NOT BE SUCCESSFUL WITHOUT YOUR SUPPORT.

JOIN SODAPAC NOW!

SODAPAC CAN COUNT ON ME!

Sustaining Member	$100
Physician & spouse	$200
Regular member	$ 40
Physician & spouse	$ 80

Print name: _____

Return this form with your check to:

SoDaPAC
608 West Ave., North
Sioux Falls, SD 57104

REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

The Commission on Legislation and Governmental Relations met on November 14, 1984. The Commission considered several items of old business. The licensure of radiologic technologists was again considered. Although there was support for the concept of safety in the delivery of radiologic techniques, there was concern over the accessibility of educational programs as well as availability of licensed radiologic technologists in rural areas. It was therefore recommended that the State Medical Association oppose licensure of radiologic technologists until such time as these concerns are addressed.

The Coroner Bill as proposed by Dr. Brad Randall was again reviewed. Changes have been made in this legislation this year and again it was recommended to the Council that the State Medical Association sponsor this legislation.

The legislation limiting awards in medical malpractice action was scheduled to terminate on June 30, 1986. The current legislation limits the amount of total general damages to $500,000. It was recommended to the Council that the State Medical Association endorse the repeal of this termination provision.

Legislation concerning cardiopulmonary resuscitation training in high school students was reviewed. Last year this legislation for mandatory training was defeated. It was the recommendation of the Commission this year that the Council of the State Medical Association endorse a bill for voluntary cardiopulmonary resuscitation training for high school students.

New business considered by the Commission included a lien law for physicians, on which no further action was recommended. A bill presented by Dr. Brad Randall concerning compensation for rape victims was reviewed. It was recommended to the Council that the State Medical Association support this legislation.

Contraceptives to minors legislation was discussed. It was recommended to the Council that the State Medical Association introduce a bill that allows medical doctors in South Dakota to treat minors for birth control, drug and alcohol addiction without parental consent.

The medical practice act revision legislation was introduced by Mr. Johnson. Several areas were discussed, including prohibiting the discovery of information from the Board of Medical and Osteopathic Examiners in malpractice litigation. It was recommended to the Council that the State Medical Association support the Medical Practice Act revisions.

Legislation allowing optometric prescription of therapeutic drugs was discussed. It was recommended to the Council that if such legislation is introduced that the State Medical Association oppose such legislation.

The final piece of new business concerned a statute on physicians reporting disabilities of pilots to aircraft pilots licensing authorities. This legislation would give protection to physicians reporting such disabilities. It was recommended to the Council that the State Medical Association draft this legislation for introduction to the 1985 Legislature.

Summary of Legislative Data. This is the final summary of the 1985 Legislative program adopted by the Commission:

SPONSORED BILLS
1. Legislation on malpractice awards — signed by Governor.
2. Coroner's Bill — signed by Governor.
3. Minor consent bill allowing physicians to treat minors for birth control, alcohol and drug addiction without parental consent — died on the House floor.
4. Medical Practice Act — signed by the Governor.

ENDORSED BILLS
1. Cardiopulmonary Resuscitation bill — tabled in House Health & Welfare Committee.
2. Bill repealing the permitted use of Laetrile — signed by the Governor.

OPPOSED BILLS
1. Data Commission bill requiring physicians, hospital and third party payers to report comprehensive data to the Health Department — killed in House Health & Welfare Committee.
2. Radiologic technologists bill — killed in House Health & Welfare Committee.
3. Optometry bill — died in committee.

Respectfully submitted,
James R. Reynolds, M.D., Chairman
Commission on Legislation
and Governmental Relations

The Reference Committee carefully reviewed the report of the Commission on Legislation and Governmental Relations. The Reference Committee recommends that Bob Johnson and Lorin Pankratz be commended for all their fine work during the legislative session. The Reference Committee also recommends that the Association continue to endorse voluntary CPR training for high school students. The Reference Committee endorses an outreach training program for x-ray technologists. The Reference Committee recommended acceptance of this report.

REPORT OF THE COMMISSION ON MEDICAL SERVICE

The Commission on Medical Service of the South Dakota State Medical Association held two meetings during the past year. The Commission has dealt with several new issues including a survey in regard to a locum tenens program for South Dakota, the issue of Medicare reimbursement in regard to participating and non-participating physicians, the staffing requirements for mental health centers, and administrative rules in regard to ambulance operations. We have continued to update and advise the Council in regard to these matters.

The Commission has continued to evaluate and monitor the state disaster plan for the state of South Dakota, issues regarding Medicare assignment and standards for accreditation of the programs of medical education in the state of South Dakota.

The Commission also tried to discuss physician grievances with the American Family Life Insurance Company and when they refused to discuss the issue, the matter was referred to the Council who adopted a more aggressive approach in regard to resolution of this matter.

Respectfully submitted,
J. D Bachmayer, M.D., Chairman
Commission on Medical Service

The Reference Committee reviewed the report of the Commission on Medical Service and recommended acceptance of this report.

REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE

The Commission met on Friday, September 21, 1984. At that time plans for the upcoming 1985 meeting were discussed. The tentative schedule was set forward. It should be noted, however, in subsequent meetings by telephone that this schedule has been revised due to unavailability of speakers. It was recommended to the Council that x-rays should be taken by certified technologists. However, as this is probably not possible in South Dakota in each instance, that it might be appropriate for an outreach program to be established by the University of South Dakota Medical School for training of personnel on basic x-ray techniques. Discussion of the nuclear waste proposal was carried out. It was our recommendation to the Council that, as there is a blue ribbon state panel which has been studying this issue, the Association not make a statement until that information has been received.

In reference to the post-polio syndrome, awareness was expressed by Kim Husby to the State Medical Association. It was recommended that this information be supplied to Dr. Jessie Easton for the possibility of an article to be submitted to the South Dakota Journal of Medicine. It was recommended to the Council that it would be appropriate for the South Dakota State Medical Association to be in favor of the concept of a state-wide tumor registry, making certain that patient confidentiality is maintained. A subcommittee of the State Scientific Commission is the Continuing Medical Education Committee. It has met and

the state's CME granting powers has been reviewed by the National Board for CME. This review was performed on March 13, 1985 and it is not anticipated that results of this will be received until after October 1985.

Respectfully submitted,
K. G. Koob, M.D., Chairman
Commission on Scientific Medicine

The Reference Committee reviewed the report of the Commission on Scientific Medicine and recommended acceptance of this report.

REPORT OF THE COMMISSION ON INTERNAL AFFAIRS, COMMUNICATIONS AND LIAISON

The Commission met twice during the past year, those dates including Wednesday, August 29, 1984 with a meeting at the Howard Johnson Motor Lodge in Sioux Falls, SD; and our second meeting on November 12th at the Ramada Inn in Sioux Falls.

The meeting on August 29th was the regularly scheduled meeting for the Commission. The Commission reviewed, as it always does, the South Dakota State Medical Association Financial Report and Mr. Johnson responded to questions concerning the various income and expense items.

Mr. Johnson then briefly outlined the proposed public relations program for the State Medical Association and following that a lengthy discussion was incurred in relationship to multiple ideas and thoughts in relationship to the direct approach to handling appropriate PR program for the State Medical Association and the doctors of South Dakota. Following are a number of items that were discussed and subsequently approved.

1. The Commission recommended to the Council that the South Dakota State Medical Association have major emphasis in the coming year to educate our membership in the areas of public relations.
2. The Commission recommended to the Council that as a short term goal we develop information to patients via the media covering various timely issues. Included in this would be Association news releases directed to district medical societies and/or individual physicians for further dissemination to the media.
3. The Commission recommended to the Council that the South Dakota State Medical Association obtain advice of specialists within the AMA division of public relations as to the direction that our PR program should take. A special meeting with the appropriate personnel from the AMA was to be scheduled at a later date. That meeting did in fact occur then as listed above on November 12, 1984.

Following this then, Mr. Johnson discussed the pending suit, the AMA in regards to Medicare changes as well as further definition of the terms participating and non-participating. The Commission reviewed several proposals from insurance companies and computer companies and accepted those for information with no further action. The Commission then also recommended to the Council that the State Medical Association support improved quality of nursing education and training in South Dakota. This was brought up in relation to a resolution adopted by the South Dakota Board of Nursing regarding nursing education in South Dakota. The resolution called for a baccalaureate degree to be established as the level of entry into professional practice in South Dakota. The Commission in view of that, however, expressed reservations as to whether or not simply raising the level of entry into nursing practice to that required baccalaureate degree achieved stated objectives. The Commission also then reviewed the reports received from the Impaired Physicians Committee regarding coverage of Blue Cross/Blue Shield for out-of-state treatment for members. We recommended that this also be approved. We then also discussed the Code of Cooperation which has been developed in conjunction with the South Dakota Hospital Association and recommended that the Commission approve the draft for publication.

The next scheduled meeting was then a special meeting that was set up on November 12, 1984. This meeting included not only members of our Commission but Jane Coughlin and Marilyn Canna from the Department of Consulting Services, AMA Division of Communications. They brought with them a very detailed program concerning appropriate PR programs and potential public relation programs that the State Medical Association could use very well in the development of an appropriate PR program. Their recommendations to us included:

1. A newspaper health column written by a physician or a freelance writer with an SDSMA credit line.
2. News releases on articles published in the South Dakota Journal of Medicine with spokesman from the SDSMA available to reporters to provide backup information.
3. AMA releases could be individualized for South Dakota, AMA radio scripts could be utilized as well as TV spots and several of these were in fact reviewed at that meeting.
4. AMA and auxiliary programs on prevention of child abuse, etc. are also available for our use.
5. Package program on the elderly for TV is available from the AMA.
6. The use of cable TV and/or public service announcement times on current TV channels available in the State of South Dakota.
7. A speakers bureau.
8. The use of AMA speeches which are on file and could be individualized to our needs as well as the physicians and/or staffs of our hospitals and clinics.
9. AMA information concerning Medicare regulations which is available not only for physicians information but also information to our patients.
10. A questionnaire and/or booklet developed in Texas to assist doctors in solving problems in office procedures.

Following a lengthy discussion on the above topics as well as others suggested by the Commission, it was moved by Dr. Barlow that the Commission recommend to the Council that the South Dakota State Medical Association pursue a public relations campaign and that it be directed immediately to issues concerning the cost of medical care and the impact of such questions on the following:

A. Choice of physician
B. DRG's
C. Advances in Medical Technology

The motion was seconded and carried.

Dr. Michael McVay then moved that the Commission recommend to the Council that the South Dakota State Medical Association not use paid advertising to promote the issues of the previous motion but to utilize the speaker bureaus, brochures, public service announcements, cable TV, etc. The motion was seconded and carried.

Dr. Barlow then moved that the Commission recommend to the Council that the SDSMA utilize the public service spots developed by the AMA that would assist in improving the overall image of the physician in the state of South Dakota. The motion was seconded and carried.

Dr. Richard Holm then moved that the Commission recommend to the Council that the SDSMA work through the District Medical Societies in bringing this information to the attention of the physicians and to assist in the distribution of the material. This motion was also approved.

The last motion was by Dr. Barlow that the Commission relay the following thoughts to the Council: that the above program is just a start and if the Commission proceeded there will be many other programs and goals that should be approached in the future and that this Commission feels that this is a very important part of its work and will be continuing the PR program and its development for the South Dakota State Medical Association into its meetings in 1985. With that the meeting was then adjourned. A subsequent meeting was then to follow in the spring of 1985.

The following physicians who were previous members of the South Dakota State Medical Association have passed away within the last year:

John H. Dickinson, M.D.	Canistota, SD
Robert A. Weber, M.D.	Mitchell, SD
S. W. Fox, M.D.	formerly of Pierre, SD
G. I. W. Cottam, M.D.	Sioux Falls, SD
C. A. Johnson, M.D.	Lemmon, SD

Myrtle Carney, M.D.	Ft. Worth, TX (honorary member)
J. A. Eckrich, Sr., M.D.	Aberdeen, SD
R. B. Leander, M.D.	Sioux Falls, SD

The Commission report also includes the report of the Health Career Grant Fund and its activities in 1984. The enclosed copy covers those activities that the Health Career Grant fund was involved in during the last 12 months.

In further relationship to the Commission on Internal Affairs, Communications and Liaison, the Commission also deals directly with the financial report of the State Medical Association, the general fund and the building fund. The Commission at its regular meetings, including both of the meetings as listed above, has reviewed the budget on an ongoing basis for all three areas including the general fund, building fund and journal fund. The Budget and Audit Committee consisting of the Executive Commission and the Chairman of this Commission also met on January 10, 1985. The committee at that time reviewed the proposed budget for the general fund, the journal fund, and the building fund and found essentially no change in the proposed budgets for 1985-1986 in comparison to those budgeted for 1984-1985. All three budgets were considered and reviewed in depth and submitted to the Council for its consideration with unanimous support from the budget committee. The proposed budget for 1985-1986 year for all three funds is included in this report.

The Commission on Internal Affairs, Communications and Liaison looks forward with vim and vigor to pursuing an appropriate public relations plan that will aid not only the State Medical Association but also all of its individual members in bringing better patient care and appropriate public relations to all of our members.

Respectfully submitted,
Clark W. Likness, M.D., Chairman
Commission on Internal Affairs,
Communications and Liaison

The Reference Committee reviewed the report of the Commission on Internal Affairs, Communications and Liaison and recommended acceptance of this report.

HEALTH CAREER GRANT FUND FINANCIAL REPORT

3/1/84-2/28/85

Balance in Savings Account 03-01-84		$ 2,027.67
Income		
Interest	$ 501.42	
Principal	1,721.10	
Collection Cost Reimbursement	219.77	
	$ 2,442.29	2,442.29
		$ 4,469.96
Expenses		
3 Grants @ $500	$ 1,500.00	
Bank Charges	6.00	
Collection Charges	613.46	
	$ 2,119.46	2,119.46
		$ 2,350.50
Balance in Savings Account 02-28-85		$ 2,350.50
Certificates of Deposit		
#1423	$ 8,136.26	
1 year — 8.75%		
#553	17,160.81	
6 months — 8.25%		
#1266	5,000.00	
2½ years — 9.25%		
	$30,297.07	
Interest earned on C.D.'s	$ 2,217.82	
#1423	$ 697.62	
#553	1,520.50	
	$ 2,218.12	

Assets 02-28-85	
Savings Account	$ 2,350.50
Certificates of Deposit	30,297.07
Outstanding Loans	4,809.47
	$37,457.04

The Reference Committee reviewed the financial report of the Health Career Grant Fund Committee and recommended its approval.

1985-86 BUDGET SOUTH DAKOTA STATE MEDICAL ASSOCIATION

GENERAL FUND
INCOME

ITEM	BUDGETED 84-85	PROPOSED 85-86
State Dues	$190,000.00	$190,000.00
Annual Meeting	25,000.00	20,000.00
Refunds & Misc.	5,500.00	6,500.00
Car Reimbursement	500.00	500.00
Continuing Med. Education	1,000.00	1,000.00
Salary Reimbursement	18,900.00	20,000.00
Other Programs		
7th Dist. Salary Reimb.	1,350.00	1,350.00
Equip. Repl. Fund	2,400.00	2,400.00
AAFP Salary Reimb.	1,500.00	1,500.00
Medical Student Dues	500.00	500.00
Collection Service	3,500.00	5,000.00
Interest	25,000.00	27,000.00
Other	4,000.00	4,000.00
	$279,150.00	$279,750.00

EXPENSES

ITEM		
Salaries	$130,000.00	$130,000.00
Social Security	7,500.00	7,700.00
Legal & Audit	7,500.00	9,000.00
Telephone	3,000.00	3,000.00
Office Supplies	10,000.00	10,000.00
Dues & Subscriptions	900.00	1,000.00
Physicians' Travel	14,000.00	14,000.00
Annual Meeting	20,000.00	20,000.00
Public Relations	7,000.00	10,000.00
Journal Subsidy	9,000.00	10,000.00
Postage	7,000.00	6,500.00
Miscellaneous	100.00	100.00
Legislation	5,500.00	4,000.00
Staff Travel	12,000.00	11,000.00
Insurance	3,000.00	3,000.00
Retirement/Fringe	30,000.00	32,000.00
Car Operation & Maint.	3,000.00	3,000.00
Auxiliary Newsletter	1,600.00	1,600.00
Employment Tax	800.00	750.00
Continuing Med. Education	750.00	750.00
Income Tax	300.00	200.00
Medical Student Fund	500.00	500.00
	$273,450.00	$278,100.00
Reserve	5,700.00	1,650.00
	$279,150.00	$279,750.00

JOURNAL
INCOME

ITEM	BUDGETED 84-85	PROPOSED 85-86
Advertising	$17,000.00	$18,500.00
Subscription	1,200.00	1,200.00
Refunds	720.00	720.00
Journal Subsidy	9,000.00	10,000.00
Miscellaneous	600.00	600.00
	$28,520.00	$31,020.00

South Dakota Foundation for Medical Care

APPLICATION OF WAIVER OF LIABILITY

In the SDFMC peer review process, the physician reviewer is responsible for making a determination as to whether or not covered inpatient care is medically necessary or provided at the appropriate level. Another responsibility is to determine who will be liable for charges accruing for any medically unnecessary admissions or services. SDFMC indicates on denial notices that 'waiver of liability' applies, which simply means that Medicare is still financially liable for denied admissions or services on the assumption that neither the patient or hospital could reasonably know that the admission was not medically appropriate. The patient is never found liable for hospitalization or services denied by SDFMC unless the patient receives a denial prior to hospitalization or while still hospitalized.

For most SDFMC denials, the hospital usually receives waiver of their liability for payment, except in those rare instances in which the hospital was aware prior to admission that the admission was medically unnecessary or that the patient could have been more appropriately treated at another level of care. However, a hospital can lose its waiver of liability status, and be financially liable for inappropriate services denied by SDFMC. This occurs if the hospital had too many admission denials per calendar quarter, which happens if SDFMC denies more than 2.5% of the cases reviewed per quarter, (provided there were at least three admissions denied that quarter). When this occurs, the hospital (not the patient) becomes financially liable for claims denied by SDFMC in the subsequent quarter. Rarely has a hospital in this state had more than 2.5% or three denials per quarter for Medicare claims.

SDFMC is committed towards physician peer review. If you as a physician receive an admission denial and disagree with the determination of the physician reviewer, you have the right and are encouraged to contact SDFMC and request a second opinion or reconsideration of our determination.

Everyone's cooperation is essential to provide the optimal effective peer review and quality of care program. We appreciate your cooperation in this endeavor.

EXPENSES

ITEM	BUDGETED 84-85	PROPOSED 85-86
Salaries	$ 2,200.00	$ 2,200.00
Legal & Audit	100.00	100.00
Social Security	50.00	50.00
Telephone	115.00	125.00
Postage	1,800.00	1,800.00
Office Supp. & Print.	24,255.00	26,645.00
Travel	—	100.00
	$28,520.00	$31,020.00

BUILDING FUND INCOME

ITEM	BUDGETED 84-85	PROPOSED 85-86
Foundation Rent	$15,640.00	$16,380.00
Board of Exam. Rent	4,800.00	5,100.00
Interest Income	12,000.00	11,000.00
	$32,440.00	$32,480.00

EXPENSES

ITEM	BUDGETED 84-85	PROPOSED 85-86
Salaries	$17,940.00	$17,980.00
Legal & Audit	1,500.00	1,500.00
Social Security	5,000.00	5,000.00
Utilities	4,000.00	4,000.00
Maint. & Supplies	4,000.00	4,000.00
	$32,440.00	$32,480.00

The Reference Committee recommended approval of the proposed budget for 1985-86.

REPORT OF THE COMMISSION ON PROFESSIONAL LIABILITY

The state malpractice insurance commission met on two occasions, once on November 13, 1984 and again on March 21, 1985. The spiraling malpractice costs were of grave concern to all Commission members. Much of the discussion at both meetings revolved around attempting to glean from the various tort reform packages introduced around the United States in the last ten years, those that have survived the tests in court and those that have resulted in premium reduction. Basically, those plans adopted in Indiana and Louisiana have been studied in the most depth. The differences and similarities of the Indiana law and the South Dakota law were reviewed as well as the malpractice rates. Mr. Dave Gerdes, the Association's attorney, has been contacted regarding the Indiana law. The commission requested Mr. Johnson contact Indiana State Medical Society to get further information as to their part in passing this particular tort reform package.

Medical Malpractice Insurance — The spiraling malpractice rates across the United States are creating another crisis similar to that seen in the 1970s. Even the future obtaining of medical malpractice insurance in some fields is in jeopardy. The question of availability of insurance for obstetricians was discussed and it was agreed that Mr. Johnson survey the South Dakota State Medical Association members who are obstetricians to advise them that there is a potential lack of coverage and that they should contact their insurance carriers regarding this question well in advance of their renewal date. Also, they should investigate alternate sources of coverage.

AMA Special Task Force on Professional Liability and Insurance Action Plan — The Commission members studied this booklet. This is the third part of the AMA effort to insure their membership of the professional liability crisis. The various tort reforms suggested by the AMA were discussed. Mr. Johnson was requested to provide the Commission with additional information relative to the cap on general damages and what special damages mean to this cap. A patient compensation fund and a mandatory pre-trial screening panel were discussed at length. Mr. Johnson will do research in both of these areas including contacting the St. Paul Company to determine their position on such tort reform legislation.

Other Business — There was some discussion concerning alternatives to professional liability insurance, i.e., either going bare or to a no-fault type system. The other matter of grave concern is the increasing cost of "the tail" in malpractice insurance coverage. The Commission will meet again on June 6th in Sioux Falls to again review the information obtained.

Respectfully submitted,
F. G. Alvine, M.D., Chairman
Commission on Professional Liability

The Reference Committee reviewed the report of the Commission on Professional Liability and recommended acceptance of this report.

REPORT OF THE COMMITTEE FOR CONTINUING MEDICAL EDUCATION

This year the Committee for Continuing Medical Education prepared an application for reaccreditation. This inspection was held on Wednesday, March 13, 1985. The survey team included Pam A. Hanson of Salt Lake City, Utah and D. James Hickson, M.D., Mt. Gilead, Ohio. They indicated that their impressions were positive and that they would file such a report to the Accreditation Council for Continuing Medical Education. In addition, we have received two applications for reaccreditation and will be surveying each organization during 1985. I assumed the position of chairman in December of 1984. I will be leaving Sioux Falls in April of 1985, and therefore will vacate the position of chairman. K. G. Koob, M.D. has been notified of my resignation and will select a chairman from the membership of the Commission on Scientific Medicine.

Respectfully submitted,
B. L. Johnson, M.D., Chairman
Committee for Continuing Medical Education

The Reference Committee reviewed the report of the Committee for Continuing Medical Education and recommended acceptance of this report.

REPORT OF THE GRIEVANCE COMMISSION

This has been a relatively quiet year for the Grievance Commission of the State Association with only a few complaints to be considered by the Commission itself. These have all been completely resolved at this particular time.

Those grievances issued against a physician by a patient were all thoroughly investigated and in each case the actions of the physician were completely exonerated and the grievances were deemed unfounded.

The Commission, which includes Dr. Winston Odland of Aberdeen, Dr. Durward Lang of Sioux Falls, Dr. Bruce Lushbough of Brookings, and Dr. Joseph Hamm of Sturgis, have continued to play a very important part in the deliberations of the Committee. I take this opportunity to thank them for their support in this particular endeavor.

Respectfully submitted,
Duane B. Reaney, M.D., Chairman
Grievance Commission

The Reference Committee reviewed the report of the Grievance Commission and recommended acceptance of this report.

REPORT OF THE LONG RANGE PLANNING COMMITTEE

The Long Range Planning Committee met September 5, 1984, in Sioux Falls, South Dakota. Drs. Loos, Guddal, Smith, and Nemer were present. We continued our evaluation of the SOUTH DAKOTA JOURNAL OF MEDICINE, public relations program, Continuing Medical Education, member benefits and annual meeting format. Recommendations were made to the Council at the September meeting by myself. No further meetings were held upon a poll of the committee members who felt no

further business was pressing.

Respectfully submitted,
Gerald D. Loos, M.D., Chairman
Long Range Planning Committee

The Reference Committee reviewed the report of the Long Range Planning Committee and recommended acceptance of this report.

REPORT OF THE LIAISON COMMITTEE

The Liaison Committee of the South Dakota State Medical Association and the State Health Department had a productive meeting in which numerous agenda items were discussed including Cancer Registry, Medical Practice Act, Fetal Alcohol Program, Controlled Substance Regulation and some general discussion on the direction of the department in these and other areas. The Liaison Committee found Secretary Massa and his staff open, gracious and interested in physician points of view.

During the year this committee was not in conflict with the Department of Health except for some misunderstanding about the role of Public Health nurses in the delivery of medical care in rural communities.

At our winter meeting we concluded the session with a non-per diem luncheon at the Chuck Wagon in Pierre, South Dakota. A good time was had by all. Incidentally, many or most of the Liaison Committee members continue to forego the use of state vouchers for meeting expense supporting the position of genuine interest in bringing the physician input from the Medical Association to the Health Department as well as a token of cost saving.

Respectfully submitted,
Winston B. Odland, M.D.
Chairman, Liaison Committee

The Reference Committee reviewed the report of the Liaison Committee and recommended acceptance of this report.

REPORT OF THE SOUTH DAKOTA POLITICAL ACTION COMMITTEE

1984 has been an extremely busy year for your SoDaPAC Board of Directors, especially since it was an election year. The Board of Directors held three meetings during the 12 month period between February 1984 and February 1985.

On June 8, 1984, the Board met in conjunction with the annual meeting of the State Medical Association.

On July 19, 1984, the Board met in Sioux Falls to consider candidates for our support.

Finally on January 28, 1985, the Board met in Pierre in conjunction with the Legislative days program of the South Dakota State Medical Auxiliary.

In addition, a Committee of the Board interviewed Dale Bell on May 11, 1984, and another Committee interviewed Tom Daschle in June.

Eventually, and after considerable discussion at the July meeting, the Board voted to request a donation of $5,000.00 to the Daschle campaign. AMPAC actually contributed $2,500.00. Also, AMPAC contributed $5,000.00 to the campaign fund for Larry Pressler.

On the State basis, SoDaPAC contributed to the campaigns of 21 State Senators, of whom 15 were elected, and to the campaigns of 35 candidates for the House, of whom 32 were elected.

During the year 1984, our total income from dues was approximately $9,000.00, half of which was passed on to AMPAC. $1,300.00 was contributed to candidates in the Primary Elections and $5,900.00 contributed to candidates in the General Elections. In addition, the Black Hills District Medical Society and the Aberdeen District Medical Society each contributed $100.00 to the educational account and the South Dakota Academy of Ophthalmology contributed $250.00 to the educational account. Besides the above dues income, we had $5,700.00 remaining from 1983.

This is my final annual report as chairman of South Dakota Political Action Committee and I want to thank all of the members of the Board for their support and cooperation. I also want to thank Robert Johnson, the appointed treasurer, for his valuable counsel in all aspects of SoDaPAC work, as well as his careful attention to the work the treasurer must do.

1985 is an off-year, but 1986 will again be an extremely important one, with both Senator Abdnor and Congressman Daschle up for re-election. Also, in 1986 South Dakota will elect a new Governor.

Both your financial and your personal support are necessary if SoDaPAC is to support the candidates who are willing to work with our organized medicine.

If you have not already done so, please renew your membership now.

Respectfully submitted,
Nathaniel R. Whitney, M.D.
Chairman, SoDaPAC

The Reference Committee reviewed the report of the South Dakota Political Action Committee and recommended acceptance of this report.

REPORT OF THE BOARD OF DIRECTORS OF THE SOUTH DAKOTA MEDICAL SCHOOL ENDOWMENT ASSOCIATION

As prescribed by the Bylaws, the annual meeting of the Board of Directors of the South Dakota Medical School Endowment Association was held during the annual meeting of the South Dakota Medical Association on June 7, 1984 in Rapid City, South Dakota. The Board elected officers, approved the financial report and conducted other business. Throughout the year other matters are addressed as necessary by mail and telephone with the assistance of the staff of the South Dakota State Medical Association.

The goals of the Endowment Association continue to be assistance to students at the University of South Dakota School of Medicine through loans at reasonable rates of interest, and the support of the office of the Dean of the School in essential activities for which there are no other funds.

Forty-four students were granted loans totaling $21,110 during the present academic year. Loans ranged from $225 to $1750. The average was $480 made at 6% interest. Though the total is a small part of the more than $1.8 million which our students have borrowed this year, the loans are tailored to imperative needs and at rates which enhance the impact of available funds.

Contributions from 154 physicians totaled $17,280 in 1984. Federal sources comprise the preponderance of student loan funds. That source is seriously threatened by the proposed federal budget presenting a crisis to the students of the School of Medicine. The Endowment Association remains an essential function of the South Dakota State Medical Association.

Respectfully submitted,
The Board of Directors
Joseph N. Hamm, M.D., President
Robert R. Giebink, M.D.
Warren Jones, M.D.
Bruce C. Lushbough, M.D.
Gerald E. Tracy, M.D.
Bruce H. Allen, M.D.
Theodore E. Sattler, M.D.

The Reference Committee reviewed the report of the Board of Directors of the South Dakota Medical School Endowment Association and recommended acceptance of this report.

REPORT OF THE ARCHIVES AND HISTORY COMMISSION

The Commission did not meet during the past year; however, historical documents and other records continue to be gathered at the executive office. These will be placed in permanent storage at the Center for Western Studies located at Augustana College.

Respectfully submitted,
C. B. McVay, M.D.
David Buchanan, M.D.
Virginia Tracy, M.D.
Roscoe Dean, M.D.
Archives and History Commission

The Reference Committee reviewed the report of the Archives and History Commission and recommended acceptance of this report.

REPORT OF THE IMPAIRED PHYSICIANS COMMITTEE

The Committee met in June and again in November of 1984 and has also continued to function on an informal basis throughout the year.

Criteria for dealing with, and the protocol for management of, physicians neurologically impaired, or senile and no longer competent practitioners was adopted.

Mandatory reporting laws of various states have been reviewed. We are currently awaiting recommendations from the AMA, as they have been studying these reporting laws for several years. They have not made an official recommendation as of yet.

In Sept., the Chairman attended the 6th National AMA convention of the Impaired Physician in Secaucus, N.J., which was extremely informative and beneficial.

Respectfully submitted,
David Yecha, M.D., Chairman
Impaired Physicians Committee

The Reference Committee reviewed the report of the Impaired Physicians Committee and recommended acceptance of this report.

REPORT OF THE MEDICAL/LEGAL COMMITTEE

The committee met on September 7, 1984, November 16, 1984 and March 8, 1985, in Sioux Falls.

The major piece of work by this committee was the preparation and introduction of the "Interprofessional Code for Physicians and Attorneys of South Dakota." The committee has spent many hours discussing problems that may exist between the two professions and methods by which some of these problems can be addressed. There has also been considerable discussion concerning the legal ramifications of medical issues such as, but not limited to, Do Not Resuscitate, No Code and Living Wills.

This committee continues to discuss issues that impact both professions and is currently working on a joint project for the fall of 1985.

Respectfully submitted,
Howard Saylor, Jr., M.D.
Co-Chairman, Medical/Legal Committee

The Reference Committee reviewed the report of the Medical-Legal Committee and recommended acceptance of this report.

MINUTES OF MEETING OF SOUTH DAKOTA MEDICAL SERVICE, INC. CORPORATE BODY MEETING

Howard Johnson Motor Lodge
Sioux Falls, South Dakota
June 7, 1985, 9:30 a.m.

Chairman Ortmeier called the meeting of the Corporate Body of South Dakota Medical Service, Inc., to order at 9:30 a.m., on Friday, June 7, 1985, at Howard Johnson Motor Lodge, Sioux Falls, South Dakota.

Upon roll call, the following members of the Corporate Body of the South Dakota Medical Service, Inc. were present:

Drs. Howard Saylor, Richard Gere, W. O. Rossing, George Thompson, Frank Messner, Joseph Hamm, Granville Steele, Jerome Eckrich, James Larson, Curtis Wait, R. C. Jahraus, David Buchanan, Charles Monson, Lowell Hyland, Michael Pekas, Richard Porter, John Sternquist, Robert Ferrell, James Jackson, Thomas Krafka, James Wunder, Joseph Kass, Jay Bachmayer, Alfred Shousha, W. Nicol Guddal, Parry Nelson, Tad Jacobs, Ronald Long, Tom Huber, Ravi Kapur, Theodore Hohm, Joseph Dilger, Jeffrey Hagen, Verdayne Brandenburg, Michael Ferrell, Bradley Randall, Jerome Freeman, C. Roger Stoltz, Bruce Vogt, Guy Tam, Edward Clark, R. J. Foley, Duane Reaney, Morris Radack, Robert Bloemendaal, N. R. Whitney, Richard Renka, James Rud, J. Geoffrey Slingsby, Robert Williams, John Malm, and James Collins.

A quorum being present, the Chairman declared the annual meeting of the Membership of the Corporate Body of South Dakota Medical Service, Inc., to be duly in session for the transaction of business.

Howard Saylor, Jr., M.D., moved that reading of the minutes of the last meeting of the Corporate Body, being the 1984 Annual Meeting, be waived, the same having been published in the handbook and previously mailed to each member. Such motion was seconded by Richard Gere, M.D.

The Chairman referred the membership to the House of Delegates Handbook and the Chairman of the Board's message therein on the actions of South Dakota Blue Cross during the past year. He briefly discussed the contents thereof.

Dr. Ortmeier requested Ben Johnson to present to the body the financial report of Blue Shield for 1984. Ben Johnson noted that Blue Shield's premium income was $24,409,000 as compared to 1983 premium income of $19,300,000. Blue Shield's claims payout was $21,518,000 for 1984 as compared to $16,000,000 in 1983. Operating expense was 11½% of operating income as compared to 12½% for 1983. Unassigned surplus at the end of 1984 was $4,252,000. Blue Shield's admitted assets at the end of 1984 were $11,500,000.

The Chairman called for approval of the financial report. Dr. Richard Gere moved approval and Dr. George Thompson seconded the motion. Upon voice vote the same was approved unanimously.

The Chairman called for the report of the Nominating Committee.

Dr. Robert Bloemendaal, Chairman of the Committee, stated that the Committee recommended and moved the following present Directors of Blue Shield for re-election: Dr. Denny Ortmeier of Sioux Falls, Dr. Robert VanDemark of Sioux Falls, Dr. Judson O. Mabee from Mitchell and William McDermott from Brookings. Such motion was seconded by Dr. Joseph Hamm. Dr. Hamm moved that nominations cease. Such motion was seconded by Dr. Richard Gere. Upon voice vote the same was approved unanimously.

The Chairman asked if there was any other old business which any delegate desired the body to consider. No old business was presented by any delegate.

The Chairman called for consideration of any new business that any delegate would like to bring before the Corporate Body. No business was presented by any delegate.

The Chairman asked if there was any further business any one cared to present to the Body. There being none, Dr. James Larson moved adjournment of the Corporate Body of South Dakota Medical Service, Inc. The motion was seconded by Dr. Jerome Eckrich. Upon voice vote, the same was approved unanimously.

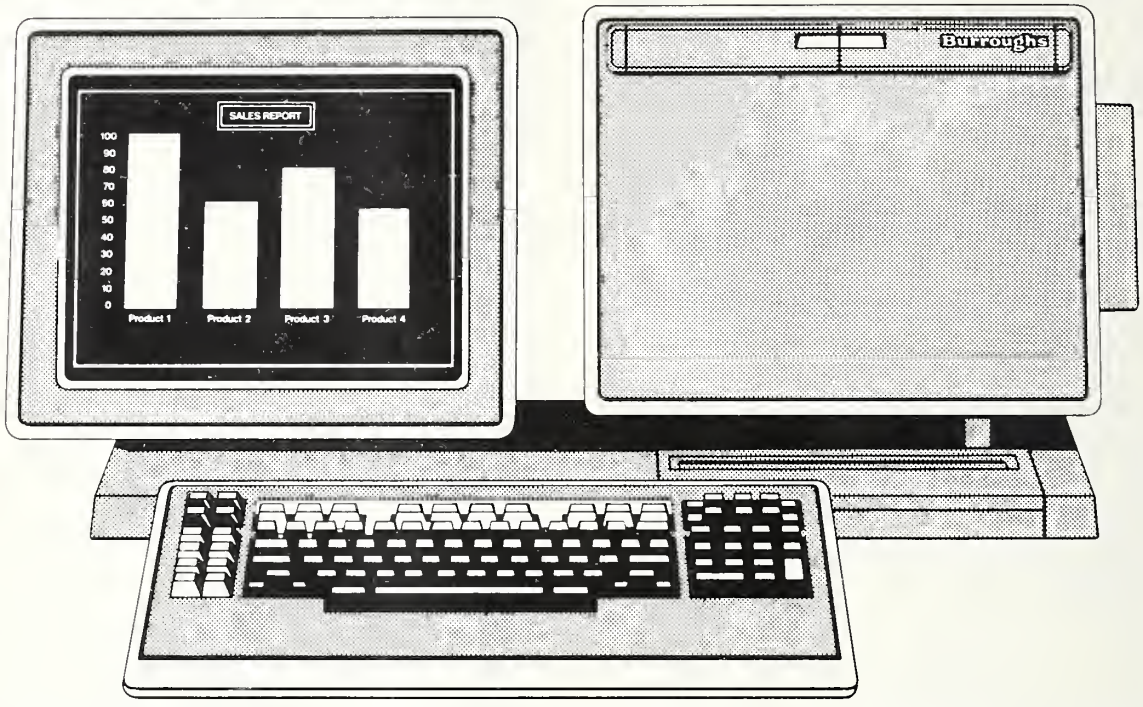
The meeting adjourned at 9:45 a.m.

John H. Zimmer,
Secretary

Grief can take care of itself, but to get the full value of joy you must have someone to divide it with.

Jerry Maginn
Wyeth **Wendy Mikkonen**

THE FUTURE BELONGS TO THOSE WHO PLAN FOR IT.



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The American Academy of Family Physicians announced the certification of the following physicians: **David Yecha, M.D.,** Gettysburg; **Richard Wake, M.D.,** Brookings; **Joseph Hamm, M.D.,** Rapid City; **Marvin Norris, M.D.,** Hot Springs; and **Kim Pederson, M.D.,** Madison. Others receiving notification of board certification include **Wayne Wetzbarger, M.D.,** American Board of Internal Medicine; **Gregg Tobin, M.D.,** American Board of Surgery; **Marc Boddicker, M.D.,** American Board of Dermatology; **D. S. Bhat, M.D.,** American Board of Urology; and **T. B. McManus, M.D.,** formerly of Sioux Falls, elected as a fellow of the American Psychiatric Association.

* * *

C. B. McVay, M.D. received a certificate of recognition for outstanding service from Mount Marty College. He is a former member of the Mount Marty College Board of Trustees and is known throughout the area as a surgeon and instructor in surgery.

* * *

The Medical Group Management Association established an **Edward J. Gerloff** scholarship to be awarded annually to a deserving senior student enrolled in an accredited South Dakota four-year institution of higher education in the field of health administration. Mr. Gerloff is the retired administrator of Central Plains Clinic, Sioux Falls, and served as MGMA's national president.

* * *

John Stransky, M.D., Watertown, and **Charles Pelton, M.D.,** Aberdeen, are recipients of Bush Clinical Fellowship awards. Dr. Stransky will use the award for advanced study in family medicine relating to development of in-hospital hospice programs. Dr. Pelton's award will allow for advanced study in family medicine with emphasis on mental and emotional health-care as well as communication skills.

* * *

The National Rural Health Care Association elected **Thomas Dean, M.D.,** Wessington Springs, to its Board of Directors.

* * *

The community of Philip honored **George Mangulis, M.D.** for his thirty years of service as a physician in Philip. Dr. Mangulis also received the State Medical Association's Community Service Award for 1985.

Linda Peterson, M.D., Watertown, addressed those attending a "Women's Health Issues Workshop" in Mitchell, and discussed women's health in their later years. Other participants included **Samuel Heth, M.D.** and **Gregory Johnson, M.D.,** both of Mitchell.

* * *

Dr. Robert Quinn, Dean of the USDSM, and **Dr. Clark Marquart,** a physician with the Indian Health Service, participated in a public television program, Conference Call, on health concerns of American Indians.

* * *

Robert Hayes, M.D., Wall, retired as a colonel and state surgeon for the South Dakota Army National Guard after 43 years of military service. He received the C. B. Alford Award sponsored by the State Health Department and presented by the State Medical Association in 1985 for his contributions to public health in South Dakota.

* * *

Jerome A. Eckrich, Sr., M.D., Aberdeen, died in April 1985. He was a graduate of Creighton University School of Medicine, served an internship in Omaha, Nebraska, and a residency in Toledo, Ohio. At the time of his death he was in general practice in Aberdeen. Dr. Eckrich was a member of the Aberdeen District Medical Society, the State Medical Association and the American Medical Association. In 1981 he received an award from the State Medical Association acknowledging his fifty years of practice in South Dakota. His son, J. A. Eckrich, Jr., M.D., practices urology in Aberdeen.

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The AMA Auxiliary works for you, the physician, for your spouse and for your community. The Auxiliary facilitates the networking of county, state, and national auxiliary programs providing a coordinating service for 80,000 volunteers.

The AMA Auxiliary promotes health education and projects.

—More than 6,000 community health services provided nationwide during the past year — including 574 on aging, 570 on children and youth, 282 on family life, 796 on health careers, 1,988 on health education, 398 on health services, 215 on international health, 193 on mental health, 592 on safety and 315 on screening.

The AMA Auxiliary supports and coordinates fund-raising efforts, in particular those for the American Medical Association Education and Research Foundation. (AMA-ERF)

—$38 million raised for AMA-ERF by auxiliaries since 1957

—Over $1.8 million earned for AMA-ERF through auxiliary projects this past year alone

—Nearly $1.1 million given to over 3,500 young people in health careers, scholarships and grants

The AMA Auxiliary produces films, video cassettes, educational kits, and workbooks for all members, which are made available from national headquarters.

The Auxiliary provides periodic publications to keep members and leaders informed of current health, organization and legislative issues.

—FACETS magazine and newsletter — sent eight times a year to 80,000

—Direct Line Newsletter — sent six times a year to 8,000 county and state auxiliary leaders

—Horizons Newsletter — sent six times a year to 3,000 resident physician and medical student spouses

The AMA Auxiliary provides members an avenue for unified efforts and a voice in health and medical legislation.

—Legislative Alert Systems — established in 36 states, 29 in conjunction with medical societies; 27 states with Key Contact systems keep open the lines of communication with legislators

—PROJECT MEDVOTE — organized by the AMA and AMA Auxiliary to register physicians, physicians' spouses, medical students, and residents

—National Legislation Committee — provides legislative alerts, updates on legislative issues and bills, and educational material to auxiliary members

The AMA Auxiliary through a vast volunteer network brings a better quality of life to all people through health programs, projects and legislative efforts.

Shirley Ryan

Shirley Ryan, President
South Dakota State Medical Association Auxiliary

DISTINGUISHED SERVICE AWARD

Started in 1951 — T. F. Riggs, M.D., Pierre (deceased)
1952 — H. Russell Brown, M.D., Watertown (deceased)
1953 — Guy Van Demark, M.D., Sioux Falls (deceased)
1954 — J. C. Ohlmacher, M.D., Vermillion (deceased)
1955 — R. G. Mayer, M.D., Aberdeen (deceased)
1956 — J. C. Ohlmacher, M.D., Vermillion (deceased)
1957 — W. E. Donahoe, M.D., Sioux Falls (deceased)
1958 — Drs. J. C. Hagin (deceased), M. W. Pangburn (deceased), and James DeGeest, Miller
1958 — J. F. Brenckle, M.D., Superior, Wisc. (deceased)
1958 — Mrs. Agnes Holdridge, Madison
1959 — Walter L. Hard, Ph.D., Vermillion
1959 — Rev. and Mrs. Robert O. Bates, Sturgis
1959 — R. M. Kilgard, M.D., Watertown (deceased)
1960 — L. J. Pankow, M.D., Sioux Falls (deceased)
1961 — Gregg M. Evans, Ph.D., Custer
1962 — Edward Shaw, Ph.D., Vermillion (deceased)
1963 — Arthur A. Lampert, M.D., Rapid City
1964 — John C. Foster, Phoenix, Arizona
1965 — A. P. Reding, M.D., Marion
1966 — Mrs. C. Rodney Stoltz, Watertown
1967 — Mrs. William Fish, Watertown
1968 — G. J. Bloemendaal, M.D., Ipswich
1969 — F. W. Haas, M.D., Yankton (deceased)
1970 — Paul Bunker, M.D., Aberdeen (deceased)
1971 — E. T. Lietzke, M.D., Beresford (deceased)
1972 — C. B. McVay, M.D., Yankton
1973 — G. E. Tracy, M.D., Watertown
1974 — J. A. Muggly, M.D., Madison (deceased)
1975 — Harvey Wollman, Hitchcock
1976 — R. H. Quinn, M.D., Sioux Falls
1977 — E. H. Heinrichs, M.D., Vermillion
1978 — John Olson, Sioux Falls, and Evans Nord, Sioux Falls
1979 — Helen Jane Hare, M.D., Rapid City
1980 — Warren Jones, M.D., Sioux Falls
1981 — Saul Friefeld, M.D., Brookings
1982 — G. Robert Bartron, M.D., Watertown
1983 — Oscar J. Mabee, M.D., Mitchell
1984 — Karl Wegner, M.D., Sioux Falls
1985 — William R. Taylor, M.D., Aberdeen

COMMUNITY SERVICE AWARD

1961 — R. A. Buchanan, M.D., Huron (deceased)
1962 — Roland F. Hubner, M.D., Yankton
1963 — George W. Mills, M.D., Wall (deceased)
1964 — John C. Hagin, M.D. Miller (deccased)
1965 — Alonzo P. Peeke, M.D., Volga
1966 — Hugo C. Andre, M.D., Vermillion (deceased)
1967 — G. Robert Bartron, M.D., Watertown
1968 — M. M. Morrissey, M.D., Pierre (deceased)
1969 — N. J. Sundet, M.D., Kadoka (deceased)
1970 — W. H. Saxton, M.D., Huron (deceased)
1971 — R. E. Van Demark, Sr., M.D., Sioux Falls
1972 — R. H. Hayes, M.D. Wall
1973 — B. F. King, M.D., Aberdeen (deceased)
1974 — M. C. Tank, M.D. Brookings
1975 — Karl Wegner, M.D., Sioux Falls
1976 — John T. Elston, M.D., Rapid City
1977 — W. F. Stanage, M.D., Pierre
1978 — C. S. Roberts, Jr., M.D., Brookings
1979 — C. J. McDonald, M.D., Sioux Falls (deceased)
1980 — E. A. Johnson, M.D., Milbank
1981 — J. A. Muggly, M.D., Madison (deceased)
1982 — Robert R. Giebink, M.D., Sioux Falls
1983 — Theodore H. Sattler, M.D., Yankton
1984 — Paul Hohm, M.D., Huron
1985 — George Mangulis, M.D., Philip

AESCULAPIUS AWARD

1966 — Paul R. Leon, M.D.
Walter Miller, M.D., Aberdeen
1968 — H. Phil Gross, M.D., Sioux Falls

FIFTY YEAR CLUB MEMBERS

C. V. Auld, Plankinton (deceased)
G. J. Bloemendaal, M.D., Ipswich
W. C. Brinkman, M.D., Sisseton (deceased)
R. A. Buchanan, M.D., Huron (deceased)
John L. Calene, M.D., California (deceased)
Myrtle Carney, M.D., Ft. Worth, Texas (deceased)
Bernard S. Clark, M.D., Spearfish
J. C. Clark, M.D., Sioux Falls (deceased)
F. L. Class, M.D., Huron (deceased)
M. E. Cogswell, M.D., Wolsey (deceased)
J. Cook, M.D., Bonesteel (deceased)
G. I. W. Cottam, M.D., Sioux Falls (deceased)
Harold L. Crane, M.D., Avon, Conn. (deceased)
S. A. Donahoe, M.D., Sioux Falls (deceased)
W. E. Donahoe, M.D. Sioux Falls (deceased)
J. A. Eckrich, Sr., M.D., Aberdeen (deceased)
V. W. Embree, M.D., Pierre (deceased)
W. D. Farrell, M.D., Aberdeen (deceased)
R. B. Fleeger, M.D., Lead (deceased)
R. R. Fisk, M.D., Flandreau (deceased)
F. W. Freyberg, M.D., Mitchell (deceased)
E. E. Gage, M.D., Sioux Falls (deceased)
D. A. Gregory, M.D., Glasgow, Mont.
E. H. Grove, M.D., Arlington (deceased)
J. C. Hagin, M.D., Miller (deceased)
Lyle Hare, M.D., Spearfish (deceased)
John F. Hill, M.D., Yankton (deceased)
J. A. Hohf, M.D., Yankton (deceased)
F. S. Howe, M.D., Deadwood (deceased)
A. H. Hovne, M.D., Salem (deceased)
Roland Hubner, M.D., Yankton
A. S. Jackson, M.D., Rapid City (deceased)
R. J. Jackson, M.D., Hot Springs (deceased)
J. A. Jacotel, M.D., Milbank (deceased)
G. T. Jordan, M.D., Vermillion (deceased)
F. F. Keene, M.D., Wessington Springs (deceased)
Ray Lemley, M.D., Rapid City (deceased)
J. H. Lloyd, M.D., Mitchell
O. J. Mabee, M.D., Mitchell
P. V. McCarthy, M.D., Aberdeen (deceased)
G. W. Mills, M.D., Wall (deceased)
B. C. Murdy, M.D., Aberdeen (deceased)
T. F. O'Toole, M.D., Rapid City (deceased)
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Letters To The Editor

RE: Clinicopathological Conference of Volume 1984, No. 12
Twenty-Eight Year Old Caucasian Female With Left Flank Pain and Renal Mass
Eric Ruhe, M.D.
John A. Ochsner, M.D.
John F. Barlow, M.D.

We have read, with considerable interest, the Clinicopathological Conference indicated above. There are a few comments which we would like to respectfully submit for response by the authors.

The differential diagnosis of solid renal masses is very nicely outlined and discussed. There are, however, a couple of entities which we feel are rather conspicious by their absence. They include oncocytoma, which is a solid renal tumor of virtually no malignant potential, impossible to differentiate pre-operatively from renal cell carcinoma but, with clearly different histological characteristics. The clinical implications of this lesion are rather disturbing because apparently there are some litigation cases where the patient has undergone a radical nephrectomy for an oncocytoma (Dr. Michael Lieber, Urology Department, Mayo Clinic, Personal Communication). Another clinical entity which could be considered for inclusion in the differential diagnosis of solid renal masses is xanthoglanulomatous pyelonephritis. This lesion is usually associated with infection and also, frequently, associated with calculi but not necessarily so. Its clinical, radiological and, also histological characteristics can make it, at times, very difficult to differentiate from renal cell carcinoma.

More intriguing are the potential considerations as related to the actual management of the case. It is regrettable that the bottom line was the unnecessary loss of a kidney in a young woman. One might wonder whether or not additional pre-operative investigations might not have resulted in an increased suspicion of a benign lesion. An angiogram, after normalization of the bleeding profile might have revealed a mass without neovascularity. Organized hematomas can show neovascularity but, a recent hematoma presumably would not.

About ten percent of renal cell carcinomas do not show neovascularity. Nevertheless, a radiologically avascular solid mass in a young woman on anticoagulation might possibly increase somewhat the suspicion of a hematoma. Assuming that this suspi-

cion was entertained, then consideration might have been given to biopsy of the mass after careful packing of the operative field to avoid potential tumor spillage. Even in the event that a tumor had been present, partial nephrectomies for renal cell carcinomas have been reported in several series as having a cure rate equal to radical nephrectomies.

The issue as to whether a partial nephrectomy is a "better operation" than a radical nephrectomy for renal cell carcinoma is not yet resolved. Nevertheless, in this particular clinical setting it would certainly appear to be a viable option.

One final consideration, we were somewhat surprised to note that, according to the authors, fifty per cent of renal carcinomas invade the renal vein as a solid mass. This has not been our experience and we do not recall any specific quotations in the literature to support the statement but, we would be most anxious to have specific information to this effect.

We, again, wish to congratulate the authors on the excellent presentation and are anxious to hear their comments to our observations.

Sandro Visani, M.D., FACS
Dileep S. Bhat, M.D.
Mitchell, SD 57301

RESPONSE

I certainly agree that renal oncocytoma is an important entity. I realize that it presents real problems in the approach to renal masses. Recently, some have tried fine-needle aspiration of these renal masses. Occasionally, you certainly can distinguish renal cell carcinoma and renal oncocytoma in this way.

Xanthogranulomatous pyelonephritis is certainly a problem entity and it can present as a mass lesion.

Although I am not a urologist, any benign lesion would require a biopsy, either previous to major surgery or as a frozen section at the time of renal expiration. I understand, however, that the best chance of cure of renal cell carcinoma is by radical nephrectomy without incision into the tumor. I am sure that angiography may be helpful in some but not necessarily in all instances.

John Ford Barlow, M.D.
Rapid City, SD

Thank you for sending me a copy of the letter from Dr. Visani concerning our case presented in the December issue of the South Dakota Medical Journal. I discussed this letter with Dr. Sall, my associate, and I would only make the following comments.

It is my personal belief that oncocytomas are still a somewhat debatable issue. I am quite certain that the treatment of choice is still a nephrectomy whether it is a radical nephrectomy or not. Secondly, granted xanthogranulomatous pyelonephritis is a solid lesion and can be confused for a malignant disease, but there is not one significant factor in this case to suggest that entity. In my experience, these patients have almost always been diabetics and they have had significant constitutional infections. CT scan certainly does not suggest such a lesion unless there were significant abscess formations. Thirdly, fine needle aspiration of potential kidney tumors is, in my mind, contraindicated except under extremely specific cases such as in solitary kidneys. We tend to avoid direct needle biopsies of kidneys, even in the face of inoperable metastatic disease. Contamination by spillage is almost inevitable particularly if there is a cystic component. I also believe that aspiration of cystic lesions suspicious of being malignant is contraindicated in this day and age with so many other sophisticated means of diagnosis.

In many institutions the well administered CT scan is replacing the select renal arteriogram as a diagnostic modality for most of malignant hypernephromas and I agree with the statement that a certain percentage of solid mass lesions representing a renal cell tumor will not show the distinguishing neovascularity.

Lastly one need only to look at the photo of a gross specimen to see that the lesion has destroyed at least three fourths of the functioning area of the kidney. As I recall it separated the medullary and cortical areas completely apart and any thought of salvaging a portion of this kidney by means of a partial nephrectomy is not dealing with reality.

This case was presented precisely because of the fact that it was the removal of a kidney in a 28 year old woman because of a benign process but the process was so severe that even in retrospect I see no benefits that she might have gained by leaving the situation undisturbed. As you know, we fail to find similar evidence of such destruction in such types of hematomas described in the literature.

John A. Ochsner, M.D.
Department of Urology
Central Plains Clinic

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Salem, Anthony G. ..... Sioux Falls
Sall, John C. ..... Sioux Falls
Salmela, Steven R. ..... Sioux Falls
Sanchez, Gonzalo M. ... Sioux Falls
Sanderson, Everett W. .. Sioux Falls
Schafer, L. W. ..... Sioux Falls
Schellpfeffer, Donald ... Sioux Falls
Schultz, Richard D. .... Sioux Falls
Schultz, Thomas ..... Sioux Falls
Simmons, Jerry L. ..... Sioux Falls
Sittner, Larry ..... Sioux Falls
Slattery, Mary T. ..... Sioux Falls
*Smith, George ..... Sioux Falls
Solberg, Lloyd E. ..... Sioux Falls
Soye, Andrew I. ..... Sioux Falls
*Stahmann, Fred S. ..... Arizona
Stassen, Michael D. .... Sioux Falls
Steidl, Lester ..... Sioux Falls
*Steiner, Peter K. ..... California
Stensland, Vernon H. ... Sioux Falls
*Stern, Charles A. ..... California
Stevens, Dennis C. ..... Sioux Falls
Stoltz, C. Roger ..... Sioux Falls
Swanson, P. ..... Sioux Falls
Talley, Robert C. ..... Sioux Falls
Tam, Guy E. ..... Sioux Falls
Thomas, J. R. ..... Sioux Falls
Tieszen, Jerel E. ..... Sioux Falls
Tobin, Michael D. ..... Sioux Falls
Tschetter, Loren K. ..... Sioux Falls
Tschetter, Richard T. ... Sioux Falls
VanDemark, R. E., Sr. . Sioux Falls
VanDemark, Robert E., Jr. Sioux Falls
VanderWoude, Larry B. Sioux Falls
Villa, Jose P. ..... Freeman
Vogt, H. Bruce ..... Sioux Falls
Volin, Verlynne V. ..... Sioux Falls
Wagner, Loyd R. ..... Sioux Falls
Waltner, Lonnie L. .... Bridgewater
Walton, Jerry L. ..... Sioux Falls
Watson, William V. .... Sioux Falls
Wegner, Karl H. ..... Sioux Falls
White, Thomas C. ..... Sioux Falls
Wierda, Daryl R. ..... Sioux Falls
Williams, Buck J. ..... Sioux Falls
Wilson, Thomas M. .... Sioux Falls
Wirtz, Patricia S. ..... Sioux Falls
Witzke, David ..... Sioux Falls
Wyatt, George W. ..... Sioux Falls
Wyatt, Ronald O. ..... Sioux Falls
Zawada, E. T. ..... Sioux Falls

YANKTON
DISTRICT No. 8

Pres., Herb Saloum, M.D. Sec., Julie Stevens, M.D. Treas., David Smith, M.D.

Aanning, Harald L. ..... Yankton
Adams, Curtis M. ..... Yankton
Brookman, Bruce T. ..... Wagner
Buchhammer, Carlos R. Vermillion
Dendinger, William J. ... Vermillion
Fletcher, Harold J. ..... Vermillion
Flom, Jon O. ..... Yankton
Foley, Robert J. ..... Tyndall
Gilmore, H. ..... Yankton
Gunderson, Dale E. ..... Yankton
Halverson, Kenneth ..... Yankton
Heinrichs, Eberhard H. .. Vermillion
Held, Gordon ..... Yankton
Holzwarth, David R. ..... Yankton
Honke, Richard W., II. .... Wagner
Hubner, Jay W. ..... Yankton
*Hubner, Roland F. ..... Yankton
Isburg, Carroll D. ..... Yankton
Jacobsen, John J. ..... Yankton
Jameson, G. Malcolm ..... Yankton
Johnson, Beth ..... Illinois
Johnson, Thomas C. ..... Yankton
Johnson, Virginia P. .... Vermillion
Kalda, Ellison F. ..... Platte
King, Patrick ..... Yankton
Lyso, Melford B. ..... Yankton
*McVay, Chester B. ..... Yankton
McVay, Michael R. ..... Yankton
Messner, Frank D. ..... Yankton
Meyer, Larry A. ..... Yankton
Neumayr, Robert J. ..... Yankton
Olson, Thomas H. ..... Vermillion
Pesce, Ulises ..... Yankton
Petersen, Loren P. ..... Yankton
Porter, Richard I. ..... Yankton
Potas, D. G. ..... Yankton
Price, Ronald D. ..... Armour
Provow, Susan R. ..... Vermillion
Pullen, Myrick ..... Yankton
Quick, William W. ..... Yankton
Radack, Morris L. ..... Yankton
Ranney, Brooks ..... Yankton
Reaney, Duane B. ..... Yankton
Reding, Arthur P. ..... Marion
Rhoades, Marques E. ..... Yankton
*Riesberg, Elsa ..... Aberdeen
Saloum, Herbert T. ..... Tyndall
Saoi, Nicasio B. ..... Yankton
Sattler, Theodore H. ..... Yankton
*Sebring, Floyd U. ..... Minn.
Smith, David A. ..... Yankton

Stanage, Willis F. ..... Yankton
Stephenson, D. ..... Yankton
Sternquist, John C. ..... Yankton
Stevens, Julie C. ..... Yankton
Thompson, Robert F. ..... Yankton
Tidd, John T. ..... Yankton
Tuan, Chung H. ..... Yankton
Turner, Charles R. ..... Vermillion
Wells, John ..... Yankton
Willcockson, John R. ..... Yankton
Willcockson, Thomas H. ... Yankton

BLACK HILLS
DISTRICT No. 9

Pres., Robert Allen, M.D. — Vice Pres., J. Geoffrey Slingsby, M.D. — Sec., N. R. Whitney, M.D.

Ahrlin, H. Lee, Jr. ..... Rapid City
*Ahrlin, Hollis L. ..... Rapid City
Akerson, R. ..... Rapid City
Allen, Bruce H. ..... Rapid City
Allen, Robert G. ..... Rapid City
Anderson, A. Byford .... Deadwood
Arnold, George H. ..... Rapid City
Ashbaugh, J. ..... Deadwood
Authier, Noe ..... Rapid City
*Bailey, John D. ..... Rapid City
Bailey, S. ..... Rapid City
Bareis, Reuben J. ..... Rapid City
Barlow, John ..... Rapid City
Bauman, Randell E. .... Rapid City
Bedingfield, John R. .... Rapid City
Behrens, Clayton L. .... Rapid City
Bergeron, Dale A. ..... Rapid City
Berkebile, Dale E. ..... Rapid City
Bloemendaal, Robert D. Rapid City
Boddicker, M. ..... Rapid City
*Borgmeyer, Henry J. ... Rapid City
Boyce, Raymond A. .... Rapid City
Boyer, David W. ..... Rapid City
Branch, Robert F. ..... Rapid City
*Bray, Robert B. ..... Rapid City
Breeden, V. ..... Belle Fourche
Brown, Michael ..... Spearfish
Burnett, Raymond G. ... Rapid City
Butz, Gerald W. ..... Rapid City
Calhoon, Stephen L. .... Rapid City
Carlson, Gary L. ..... Rapid City
Carson, Layne E. .. Little Rock, AR
*Clark, Bernard S. ..... Spearfish
*Cline, James A. . Rocky Mount, NC
Cornford, Raymond C. .. Rapid City
Dewald, Allan L. ..... Rapid City
Dickson, Daryl S. ..... Hot Springs
Drummond, Ronald G. .. Rapid City
Dzintars, Paul F. ..... Rapid City
Ebbert, Larry P. ..... Rapid City
*Elston, John T. ..... Rapid City
Engelbrecht, J. A. ..... Rapid City
Ferrell, Robert L. ..... Rapid City
Fetters, B. ..... Hot Springs
Finley, Richard C. ..... Rapid City
Frank, J. J. ..... Hot Springs
Freimark, Lyle G. ..... Rapid City
Fromm, Harold E. ..... Rapid City
Frost, Harold L. ..... Rapid City
Gebhardt, D. ..... Spearfish
*Gilbert, Freeman J. .. Belle Fourche
Gill, Timothy J. ..... Rapid City
Golliher, Warren N. ..... Spearfish
Goodhope, Robert C. ... Fort Meade
Gwinn, Charles B. ..... Hot Springs
Haas, Stephen N. ..... Rapid City
Hafner, Daniel J. ..... Rapid City
Hamm, Joseph N. ..... Rapid City
Hansen, Craig K. ..... Rapid City
Hare, Helen Jane ..... Rapid City
Harris, Russell H. ..... Rapid City
Haugan, Haakon O. ..... Rapid City
Hayes, Robert H. ..... Wall
Hercules, Costas ..... Rapid City
Herlihy, J. J. ..... Rapid City
Hewitt, John M. ..... Rapid City
Howard, William J. ..... Rapid City
Jackson, James W. ..... Rapid City
Jacobson, Theodore R. Hot Springs
James, Edward H. ..... Rapid City
Janss, W. ..... Rapid City
Jenter, George W. ..... Sturgis
Jentes, Paul K. ..... Fort Meade
Jerde, O. Myron ..... Rapid City
Johnson, Dave ..... Rapid City
Johnson, Robert K. ..... Rapid City
Jones, William E. ..... Sturgis
Kelts, K. Alan ..... Rapid City
Klar, Werner ..... Fort Meade
Knecht, John F. ..... Martin
*Koren, Paul H. ..... Rapid City
Kovarik, Joseph A. ..... Rapid City
Kovarik, Richard A. .... Rapid City
Kovarik, Wenzel J. ..... Rapid City
Krafka, Thomas L. ..... Rapid City
Kullbom, James B. ..... Rapid City
Kunz, James A. ..... Rapid City
Kwan, Francis P. ..... Rapid City
*Lampert, Arthur A. .... Rapid City
Lauer, David A. ..... Sturgis
Lewis, C. A. ..... Sturgis
Liedtke, Curtis J. ..... Sturgis
Loos, Charles M. ..... Rapid City
Lopez, Alberto S. ..... Hot Springs
Mangulis, George J. ..... Philip
Manzo-Chua, D. ..... Hot Springs
Massa, Lawrence L. ..... Sturgis
Mattson, William J. ..... Rapid City
McGuigan, Patrick M. ... Rapid City
*Merryman, Murlin P. .. Rapid City
Millea, Roger P. ..... Rapid City
Mortimer, Sam L. ..... Rapid City
Munson, H. Benjamin ... Rapid City
Neu, Norman D. ..... Rapid City
Nord, Allen E. ..... Rapid City
Norris, M. G. ..... Hot Springs
O'Dell, Ruth ..... Deadwood
Oliver, D. E. ..... Rapid City
O'Sullivan, J. ..... Bell Fourche
*Owen, Gordon S. ..... Rapid City
Palmerton, Ernest S. .... Rapid City
Parker, J. ..... Spearfish
*Perry, Wm. J. ..... Rapid City
Pucelik, J. A. ..... Deadwood
Ramos, M. F. ..... Martin
Reaney, J. ..... Rapid City
Reinoehl, Warren L. ..... Custer
Renka, Richard P. ..... Rapid City
Ridenour, Chester D. ..... Sturgis
Rosario, Elmo J. ..... Rapid City
Rud, James A. ..... Rapid City
Ruud, Edward T. ..... Hot Springs
Sabow, J. ..... Rapid City
Sandvik, David E. ..... Rapid City
Sanmartin, Jorge E. ..... Rapid City
*Saxton, A. J. ..... New Mexico
Schad, C. ..... Rapid City
Sejvar, Joseph P. ..... Rapid City
Shining, H. Streeter ..... Rapid City
Silenas, Raza ..... Texas
Slama, D. ..... Rapid City
Slingsby, J. Geoffrey .... Rapid City
Slingsby, John B. ..... Rapid City
Sutliff, Willis C. ..... Rapid City
Swisher, Lowell P. ..... Kadoka
Theissen, Hubert H. .... Rapid City
Trinidad, Reuben B. .... Deadwood
Tschetter, William R. ... Rapid City
VanEtten, Donald D. .... Rapid City
Vogele, Kenneth A. ..... Rapid City
Wehrkamp, L. ..... Fort Meade
Weitzenkamp, Larry .... Rapid City
Welsh, Gary L. ..... Rapid City
Wessel, Alvin ..... Rapid City
Westaby, Robert S. .... Hot Springs
Whitney, Nathaniel R. ... Rapid City
Wicks, Dennis R. ..... Custer
Wieland, Clark ..... Fort Meade
*Williams, F. R. ..... Arizona
Williams, Robert ..... Rapid City
Wingert, Robert I. ..... Rapid City
Wright, Paul L. ..... Rapid City
Wudel, R. L. ..... Spearfish
Yackley, James V. ..... Rapid City
Yamada, Andrew R. .... Rapid City
Zielike, Carol M. ..... Rapid City

ROSEBUD
DISTRICT No. 10

Pres., Mary Carpenter, M.D. — Vice. Pres., Melanie Webb, D.O. — Sec., Tony Berg, M.D.

Berg, Tony L. ..... Winner
Carpenter, Mary ..... Winner
Hogrefe, Louis H. ..... Gregory
Malm, John A. ..... Gregory
Marquart, Clark ..... Rosebud
Nemer, Raymond G. ..... Gregory
Stiehl, Robert L. ..... Winner
Sweet, Edwin P. ..... Burke
Tobin, Gregg ..... Winner
Webb, Melanie ..... Winner

NORTHWEST DISTRICT No. 11

Pres., Ben Henderson, D.O. Vice Pres., J. D. Collins, M.D. Sec., L. M. Linde, M.D.

Collins, James D. ..... Mobridge
Henderson, Ben J. ..... Mobridge
Knowles-Smith, P. ..... Hoven
Linde, Leonard M. ..... Mobridge
*Nolan, Bernard P. ..... Mobridge
*Spiry, Arthur W. ..... Missouri
Wunder, James F. ..... Mobridge
Yecha, David J. ..... Gettysburg

WHETSTONE VALLEY DISTRICT No. 12

Pres. L. Nelson, M.D. Sec., Kevin Bjordahl, M.D.

Bartnick, D. A. ..... Milbank
Bell, Eldon E. ..... Arkansas
Gowda, K. N. ..... Sisseton
*Gregory, David A. ..... Montana
Janavs, Visvaldis ..... Milbank
*Johnson, Edward A. ..... Milbank
Kass, Joseph ..... Rosholt
Kass, Thomas ..... Rosholt
Kosa, A. ..... England
Nelson, Lawrence F. ..... Webster
Oey, David L. ..... Sisseton
Staub, David W. ..... Sisseton
Vanadurongvan, K. ..... Milbank
Vanadurongvan, V. ..... Milbank
Vogelgesang, Lloyd C. .... Webster

* Indicates Honorary Member

South Dakota State Medical Association Roster — 1985 Membership — Alphabetical Listing

Aanning, Harald L. ..... Yankton
Abu-Ghazaleh, Samir Z. . Sioux Falls
Adajar, A. ..... Bowdle
Adams, Curtis M. ..... Yankton
Adams, Harold P. ..... Huron
Ahrlin, H. Lee, Jr. ..... Rapid City
*Ahrlin, Hollis L. ..... Rapid City
Akerson, R. ..... Rapid City
Albano, Paterno C. ..... Aberdeen
*Alcorn, Floyd ..... Sioux Falls
Alexander, James R. ..... Aberdeen
Allen, Bruce H. ..... Rapid City
Allen, Robert G. ..... Rapid City
Allen, Stanley W., Jr. ... Watertown
Altman, Stanley B. ..... Aberdeen
Alvine, Frank G. ..... Sioux Falls
Amundson, Loren H. ... Sioux Falls
Andersen, Calvin F. ..... Aberdeen
Anderson, A. Byford .... Deadwood
Anderson, Courtney W. Sioux Falls
Anderson, Edward F. ... Sioux Falls
Anderson, Esther E. ..... Aberdeen
Anderson, James A. ..... Madison
Anderson, Thorwald R. . Sioux Falls
*Anderson, Warren R. .. Sioux Falls
Angelos, Theodore A. ..... Canton
Appelwick, James E. ..... Madison
Argabrite, John W. ..... Watertown
Arneson, Wallace A. ... Sioux Falls
Arnold, George H. ..... Rapid City
Ashbaugh, J. ..... Deadwood
*Askwig, Leroy C. ..... Pierre
Aspaas, Paul K., Jr. .... Sioux Falls
Aspaas, Paul K., Sr. ... Dell Rapids
Augspurger, Ken D. .... Sioux Falls
Authier, Noe ..... Rapid City

Baas, Walter P. ..... Mitchell
Bachmayer, Jay D. ..... Aberdeen
*Bailey, John D. ..... Rapid City
Bailey, S. ..... Rapid City
Baltodano, N. ..... Lake Preston
Bandiera, Samuel J. ..... Brookings
Bareis, Reuben J. ..... Rapid City
Barker, John D., Jr. .... Sioux Falls
Barlow, John F. ..... Rapid City
Barnett, George L. ..... Sioux Falls
Bartholomew, Kenneth A. Faulkton
Bartnick, D. ..... Milbank
Bartron, G. Robert ..... Watertown
*Bartron, Harry J., Jr. ... Watertown
Bauman, Randell E. .... Rapid City
Bean, David W. ..... Sioux Falls
Bedingfield, John R. .... Rapid City
Behrens, Clayton L. .... Rapid City
Belatti, Richard G. ..... Sioux Falls
Bell, Eldon E. ..... Arkansas
Bell, G. Robert ..... DeSmet
Belyea, Mark E. ..... Huron
Benson, Gail M. ..... Sioux Falls
Bentz, J. W. ..... Platte
Berg, Sterling ..... Redfield
Berg, Tony L. ..... Winner
Bergeron, Dale A. ..... Rapid City
Berkebile, Dale E. ..... Rapid City
Berry, Jack T. ..... Mitchell
Bess, Michael A. ..... Sioux Falls
Betts, L. S. ..... Huron
Bhat, Dileep S. ..... Mitchell
Bhatti, Tajammul H. .... Sioux Falls
Billion, John J. ..... Sioux Falls
*Billion, Thomas J. .... Sioux Falls
Binder, Clifford F. .... Chamberlain
Birkenkamp, Ray T. ..... Mitchell
Blake, Jerome M. ..... Sioux Falls
*Bloemendaal, Gerrit J. .... Ipswich
Bloemendaal, Robert D. . Rapid City
Boade, Werner A. ..... Sioux Falls
Boddicker, M. ..... Rapid City
*Borgmeyer, Henry J. ... Rapid City
Borth, D. ..... Pierre
Boyce, Raymond A. .... Rapid City
Boyer, David W. ..... Rapid City
*Brakss, Valdis ..... Watertown
Branch, Robert F. ..... Rapid City
Brandenburg, Verdayne R. Sioux Falls
*Bray, Robert ..... Rapid City
Breeden, V. ..... Belle Fourche
*Breit, Donald H. ..... Sioux Falls
Brevik, Alan K. ..... Redfield
Broadhurst, Kennon E. ... Aberdeen
Brookman, Bruce T. ..... Wagner
Brown, Bradley A. ..... Watertown
Brown, Delbert L. ..... Sioux Falls
Brown, Michael ..... Spearfish
Brown, Robert H. ..... Aberdeen
Bruins, George S. ..... Sioux Falls
Bruning, G. ..... Flandreau
Brzica, Stephen M. ..... Sioux Falls
Buchanan, David J. ..... Huron
Buchhammer, Carlos R. Vermillion
Bucy, Christine F. ..... Sioux Falls
Bunker, T. ..... Aberdeen
Burkhart, Thomas J. .... Sioux Falls
Burnett, Raymond G. ... Rapid City
Burns, Howard W. ..... Sioux Falls
*Burns, Kendall R. ..... Sioux Falls
Busch, James ..... Sioux Falls
Butz, Gerald W. ..... Rapid City

Calhoon, Stephen L. .... Rapid City
Carlisle, Christopher ..... Salem
Carlson, Gary L. ..... Rapid City
Carlson, W. O. ..... Sioux Falls
Carpenter, M. ..... Winner
Carpenter, Paul L. ..... Sioux Falls
Carroll, N. ..... Sioux Falls
Carson, Layne E. .. Little Rock, AR
Carter, Guy A. ..... Sioux Falls
Carter, Peter B. ..... Aberdeen
Cavanaugh, Dennis J. ..... Huron
Chalmers, James H. .... Sioux Falls
Chang, Joe P. ..... Aberdeen
Chavier, Juan R. ..... Aberdeen
Chen, Cheng-Fu ..... Aberdeen
Christopher, John R. ..... Aberdeen
Church, Bill ..... Sioux Falls
Cink, Thomas M. ..... Sioux Falls
*Clark, Bernard S. ..... Spearfish
Clark, Carroll J. ..... Watertown
Clark, Edward T. ..... Sioux Falls
*Cline, James A. . Rocky Mount, NC
Colberg, Douglas ..... Aberdeen
Collins, E. Howard ..... Gettysburg
Collins, James D. ..... Mobridge
Cornford, Raymond C. .. Rapid City
Cosand, Marion R. ..... Pierre
Crandell, Michael P. ..... Kennebec
Cruse, J. ..... Sioux Falls
Cutshall, Vincent K. .... Sioux Falls

Dappen, Robert W. ..... Mitchell

Davis, John B. ..... Sioux Falls
Daw, Edward F. ..... Sioux Falls
Dean, Roscoe E. Wessington Springs
Dean, Thomas M. Wessington Springs
DeClark, Robert P. ..... Sioux Falls
DeGeest, James H. ..... Miller
Delaney, William A., Jr. ... Mitchell
Dendinger, William J. ... Vermillion
Desai, Bhasker J. ..... Watertown
Devick, John S. ..... Colton
Devick, M. ..... Canton
Dewald, Allan L. ..... Rapid City
Dickson, Daryl S. ..... Hot Springs
Dilger, Joseph T. ..... Mitchell
Donahoe, John W. ..... Sioux Falls
Drummond, Ronald G. .. Rapid City
Drymalski, Walter G. ... Sioux Falls
D'Souza, Edward P. ..... Aberdeen
Duggan, Robert ..... Pierre
Dzintars, Paul F. ..... Rapid City
Dzintars, Valdis A. ..... Sioux Falls

Easton, Jessie K. M. .... Sioux Falls
Ebbert, Larry P. ..... Rapid City
Eckrich, Jerome A., Jr. ... Aberdeen
*Eirinberg, Isadore D. .. Sioux Falls
Elkjer, Neil J. ..... Sioux Falls
Elson, David L. ..... Sioux Falls
*Elston, John T. ..... Rapid City
Engelbrecht, J. A. ..... Rapid City
Engelhart, Kenneth E. ... Watertown
English, Gilbert. ..... Sioux Falls
Ensberg, Dorence L. .... Sioux Falls
Epp, Dennis L. ..... Freeman

Fahrenwald, Myron E. .... Aberdeen
Farrell, Harry W. ..... Sioux Falls
Farritor, Michael ..... Sioux Falls
Fedt, Donald N. ..... Watertown
Felker, James R. ..... Sioux Falls
Fenton, Lawrence J. .... Sioux Falls
Ferrell, Michael R. ..... Sioux Falls
Ferrell, Robert L. ..... Rapid City
Fetters, B. ..... Hot Springs
Finley, Richard C. ..... Rapid City
Finney, Lawrence W. ... Sioux Falls
*Fisk, Robert G. ..... Flandreau
Fletcher, Harold J. ..... Vermillion
Flohr, Charles E. ..... Mitchell
Flom, Jon O. ..... Yankton
Flora, George C. ..... Sioux Falls
Foley, Robert J. ..... Tyndall
Foss, J. Frank ..... Sioux Falls
Frank, J. J. ..... Hot Springs
Frazer, Paul D. ..... Clear Lake
Freeman, Jerome W. .... Sioux Falls
Freimark, Lyle G. ..... Rapid City
*Friefeld, Saul ... Minneapolis, MN
Friess, Richard W. ..... Sioux Falls
Fromm, Harold E. ..... Rapid City
Frost, Donald M. ..... Sioux Falls
Frost, Harold L. ..... Rapid City
Fuller, William C. ..... Sioux Falls

Gaeckle, Thomas ..... Sioux Falls
Gaede, James ..... Mitchell
Gebhardt, D. ..... Spearfish
Gehring, Stephen H. .... Watertown
Gerber, Bernard C. ..... Aberdeen
Gere, Richard G. ..... Mitchell
Gerrish, Catherine ..... Watertown
Gerrish, Edwin ..... Watertown
Giebink, Robert R. ..... Sioux Falls
*Gilbert, Freeman J. .. Belle Fourche
Gilmore, H. ..... Yankton
Gill, Timothy J. ..... Rapid City
Gillis, Floyd D., Jr. ..... Mitchell
Goepfert, M. ..... Brookings
Golliher, Warren N. ..... Spearfish
Goodhope, Robert C. ... Fort Meade
Gowda, K. N. ..... Sisseton
Graham, Donald B. ..... Sioux Falls
Grau, Thomas J. ..... Sioux Falls
Green, Marc ..... Sioux Falls
Greenfield, Duane L. ... Sioux Falls
Gregg, John B. ..... Sioux Falls
*Gregory, David A. .. Glasgow, MT
Groote, Curtis A. ..... Sioux Falls
Gross, H. Phil ..... Sioux Falls
*Grove, M. Stuart ..... Sioux Falls
Gryte, Clifford F. ..... Huron
Guddal, W. Nicol ..... Watertown
Gunderson, Dale E. ..... Yankton
Gunnarson, Richard E. .. Sioux Falls
Gutch, Charley F. ..... Sioux Falls
Gutnik, Leonard M. .... Sioux Falls
Gwinn, Charles B. ..... Hot Springs

Haas, Stephen N. ..... Rapid City
Hafner, Daniel J. ..... Rapid City
Hagen, Jeffrey B. ..... Sioux Falls
Haley, Michael D. ..... Mitchell
Halverson, Kenneth ..... Yankton
Hamm, Joseph N. ..... Rapid City
Hansen, Craig K. ..... Rapid City
Hansing, R. L. ..... Mitchell
Hanson, Bernie H. P. ... Watertown
Hanson, William O. ..... Huron
Hare, Helen Jane ..... Rapid City
Harlow, Mark C. ..... Aberdeen
Harms, R. W. ..... Sioux Falls
Harris, F. L. ..... Sioux Falls
Harris, Mary ..... Sioux Falls
Harris, Russell H. ..... Rapid City
Hart, Harvey J. ..... Aberdeen
Hartmann, Alfred E. .... Sioux Falls
Hartzell, Allan J. ..... Sioux Falls
Haugan, Haakon O. ..... Rapid City
Hayes, Robert H. ..... Wall
Hays, Laura M. ..... Mitchell
Heidorn, Richard ..... Arlington
Heilman, B. F. ..... Pierre
Heinemann, D. ..... Canton
Heinemann, Phyllis E. .... Aberdeen
Heinrichs, Eberhard H. .. Vermillion
Held, Gordon R. ..... Yankton
Held, W. ..... Sioux Falls
Henderson, Ben J. ..... Mobridge
Hendricks, M. ..... Sioux Falls
Henrickson, Lynn A. ... Sioux Falls
Henrickson, Robert G. .. Sioux Falls
*Henry, Robert B. ..... Brookings
Hercules, Costas ..... Rapid City
Herlihy, J. J. ..... Rapid City
Hermann, Harland T. ..... Mitchell
Herrin, G. ..... Pierre
Heth, Samuel R. ..... Mitchell
Hewitt, John M. ..... Rapid City
Hockett, Richard D. ..... Mitchell
*Hofer, Emil A. ..... Huron
Hoffsten, Phillip E. ..... Pierre
Hogrefe, Louis H. ..... Gregory
Hohm, Byron T. ..... Sioux Falls
Hohm, Paul H. ..... Huron
Hohm, Robert C. ..... Huron
Hohm, Theodore A. ..... Huron
Holkesvick, R. E. ..... Aberdeen
Holland, Lambert W. .. Chamberlain
Holm, Richard P. ..... Brookings
Holzwarth, David R. ..... Yankton
Honke, Richard W., II ..... Wagner
Horner, William ..... Sioux Falls
Horning, James R. ..... Sioux Falls
Hosen, Richard S. ..... Sioux Falls
Hoskins, John H. ..... Sioux Falls
Hoversten, David L. .... Sioux Falls
Hovland, James I. ..... Aberdeen
Howard, William J. ..... Rapid City
Howe, Jerome K. ..... Mitchell
Hoxtell, Eugene O. ..... Sioux Falls
Hsu, V. ..... Aberdeen
Huber, Joel B. ..... Redfield
Huber, Thomas J. ..... Pierre
Hubner, Jay W. ..... Yankton
*Hubner, Roland F. ..... Yankton
Huet, William G. M. ..... Huron
Hughes, Howard D. .... Clear Lake
Humphreys, Donald W. . Sioux Falls
*Huppler, Edward G. . St. Paul, MN
Hurley, Brian ..... Sioux Falls
Hurley, Timothy ..... Sioux Falls
Hussain, Rif'at ..... Sioux Falls
Hyland, Lowell J. ..... Sioux Falls

Ingvoldstad, James P. ... Sioux Falls
Isburg, Carroll D. ..... Yankton

Jackson, James W. ..... Rapid City
Jacobs, Tad B. ..... Flandreau
Jacobsen, John J. ..... Yankton
Jacobson, Theodore R. . Hot Springs
Jahraus, R. Curtis ..... Pierre
James, Edward H. ..... Rapid City
Jameson, G. Malcolm ..... Yankton
Janavs, Visvaldis ..... Milbank
Janis, John B. ..... Sioux Falls
Janss, Wm. ..... Rapid City
Janusz, Albin J. ..... Aberdeen
Jaqua, Richard A. ..... Sioux Falls
Javurek, Anthony J. .... Sioux Falls
Jenter, George W. ..... Sturgis
Jentes, Paul K. ..... Fort Meade
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Annual Meeting of the American College of Physicians/ South Dakota Society of Internal Medicine, Pierre, SD, Sept. 6-7. Contact: Wm. Taylor, M.D., SD ACP Governor, 201 S. Lloyd St., Aberdeen, SD 57401. Phone: (605) 225-8800.

Annual Surgery Symposium, Hyatt Regency Hotel, Kansas City, MO, Sept. 12-13. CME credits available. Contact: Jan Johnston, Off. of CME, U. of Kansas Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 77103. Phone: (913) 588-4480.

Cardiomyopathy: Update for the 80's, Hyatt Regency, Chicago, IL, Sept. 12-14. Fee: Mem.-$290, non-mem.-$355. 14 hrs. AMA Category I credits. Contact: ACC, Extramural Prog. Dept., 9111 Old Georgetown Rd., Bethesda, MD 20814. Phone: (301) 897-5400, ext. 230.

Radiology/85: Pediatric Radiology, Willey Hall, U. of Minn., Minneapolis, MN, Sept. 17-20. Fee: $450. 23 hrs. AMA Category I credits. Contact: Audrey Chan, Registrar, CME, U. of Minn., Box 293 Mayo Mem. Bldg., 420 Delaware St., SE, Minneapolis, MN 55455. Phone: (612) 373-8012.

Tenth Annual South Dakota Perinatal Association Conference, Sioux Falls, SD, Sept. 19-20. Contact: Julie Prince Crane, R.N., Exec. Dir., 1100 S. Euclid Ave., Sioux Falls, SD 57117-5039. Phone: (605) 333-7180.

Pulmonary & TB Update, Radisson Plaza Hotel, St. Paul, MN, Sept. 19-21. CME credits available. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

October

Annual Internal Medicine Symposium, Battenfeld Aud., U. of Kans., Kansas City, KS, Oct. 9-11. Contact: Jan Johnston, Off. of CME, U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

Fourth National Seminar on Community Cancer Care, Hyatt Regency, Indianapolis, IN, Oct. 17-20. Contact: Off. of CME, Methodist Hosp. of Ind., Inc., 1604 N. Capitol Ave., Indianapolis, IN 46202. Phone: (317) 929-3733.

53rd Annual Postgraduate Assembly, The Red Lion Inn, Omaha, NE, Oct. 28-30. Contact: Lorraine E. Seible, Exec. Sec., Omaha Mid-West Clinical Society, 7363 Pacific St., #205-B, Omaha, NE 68114. Phone: (402) 397-1443.

Latest Trends in Patient Management — Radiology and Urology, Radisson Plaza Hotel, St. Paul, MN, Oct. 31-Nov. 1. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

The 51st Annual Scientific Assembly of the American College of Chest Physicians, Hilton Hotel, New Orleans, LA, Oct. 29-Nov. 1. Contact: Am. College of Chest Phys., Ed. Dept., 911 Busse Hwy., Park Ridge, IL 60068. Phone: (312) 698-2200.

November

Advanced Cardiac Life Support Provider Course, U. of Kans. Med. Ctr., Kansas City, KS, Nov. 6-8. 13.5 hrs. AMA Category I & AAFP credits. Contact: Jan Johnston, Off. of Cont. Ed., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-4480.

National Conference on Health Policy and Quality of Care for Older Americans, Radisson Mark Plaza Hotel, Alexandria, VA, Nov. 12-13. Contact: Dept. of Health Care Resources, AMA, 535 N. Dearborn St., Chicago, IL 60610.

Diagnosis and Treatment Strategies for Gynecologic Cancer, Shamrock Hilton, Houston, TX, Nov. 13-16. Contact: M. D. Anderson Hosp. & Tumor Instit., Off. of Conf. Services, Box 131, 6723 Bertner Ave., Houston, TX 77030. Phone: (713) 722-2222.

Annual Primary Care Medicine Update, Radisson Plaza Hotel, St. Paul, MN, Nov. 14-16. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Advanced Trauma Life Support Refresher Course, Orr Major Hall, U. of Kans. Med. Ctr., Kansas City, KS. 8 hrs. AMA Category I, AAFP, ACS, ACEP & AOA credits. Contact: Jody Scott, Dept. of Surg., U. of Kans. Med Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-6124.

Urology Update, Southampton Princess Resort, Bermuda, Nov. 30-Dec. 7. Fee: $390. 22 hrs. AMA Category I credits. Contact: Symposia Medicus, 2815 Mitchell Dr., Ste. 108, Walnut Creek, CA 94598.

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(ISOSORBIDE DINITRATE)

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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Family Practice Residency Survey

James E. Ryan, M.D.*
Loren Jarratt, Ed.D.†

ABSTRACT

A survey of family physician needs in South Dakota was completed by 212 of 312 South Dakota family physicians and general practitioners. While a majority believed citizens in South Dakota do have access to quality primary care, a majority also believe a need exists for more primary care physicians. Survey results also indicate physician support for the Sioux Falls based Family Practice Training Program.

INTRODUCTION

During the summer of 1984 The Department of Family Medicine, University of South Dakota School of Medicine conducted a survey of attitudes of South Dakota family physicians and general practitioners with regard to: 1) Family physician needs in South Dakota, and 2) Support of the Family Practice Residency Program at Sioux Falls, South Dakota. The survey developed data for presentation to the Board of Directors of the Family Practice Residency, Inc. to assist in the process of determining residency size.

Concerns of the Board of Directors revolved around three issues: a) program maintenance costs, b) family physician numbers and, c) patient numbers necessary for adequate resident teaching. The residency had 12 resident/year for a total of 36 in the three year program. The Board of Directors made a decision to reduce the Family Practice Residency Program from 36 total residents to 24. This article will focus on the survey results.

METHODS

The opinion survey forms were mailed in June 1984, to 312 South Dakota family medicine and general practitioner physicians. These 312 physicians represented the total population of such physicians listed on a South Dakota State Medical Association computer printout. Two hundred twelve surveys were returned (67.94%).

RESULTS

Three questions assess the opinion of physicians toward numbers of physicians in South Dakota. In response to the question, "In your opinion, are there sufficient primary care physicians in your community?," forty-seven physicians (22.705%) responded "too few," 148 physicians (71.498%) responded "adequate," and twelve (5.79%) responded "too many." To the question, "In your opinion, are there sufficient primary care physicians in your geographic area of the state?," fifty-nine physicians (28.365%) felt there were too few, 134 (64.423%) stated an adequate number, and fifteen (7.212%) stated too many. The question, "In your opinion, are there sufficient primary care physicians in the state of South Dakota?," elicited a response of too few from 123 (64.398%) physicians, an adequate number from sixty-four (33.508%), and too many from four (2.094%). Responses to the question, "In your opinion, do the citizens in South Dakota have access to quality primary health care?" were: "yes," 173 times (86.070%), and "no," twenty-eight times (13.930%). Physician responses frequency was fifty-four "yes" (29.032%) and 132 "no" (70.968%) when asked, "In your opinion, do the citizens of South Dakota feel there are sufficient numbers of family physicians in the state?"

Two survey questions involved physician support for the Family Practice Residency Program in Sioux Falls. When asked, "Are you supportive of the Family Practice Residency in Sioux Falls, South Dakota?," 199 physicians answered "yes"

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(96.602%) and seven answered "no" (3.398%). Sixty-seven physicians (37.017%) answered "yes" and 114 (62.983%) answered "no" to the question, "In your opinion, should the number of residents in the Family Practice Residency Program in Sioux Falls be reduced?" One hundred fifty-eight (79.397%) supported increased state funding by answering "yes" to the question, "Would you support encouraging the State Legislature increasing funding to the Family Practice Residency in Sioux Falls?" and forty-one (20.603%) indicated "no."

SUMMARY

Primary care physicians in South Dakota were of the opinion in 1984 that South Dakota citizens do have access to quality primary health care. A majority were also of the opinion that South Dakota has too few primary care physicians, and that South Dakota citizens feel a need for more family physicians. In addition, the survey results indicated support for the Family Practice Residency Program and increased state funding for it.

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In this day and age when everyone is trying to get a piece of our hide, it is more evident that we must be organized. This is echoed in an article in the AMA NEWS by labor lawyer J. Paige Clousson. He sums up the solution in one word: "Collectivization."

"Physicians must collectivize today, must give up a little of their individual freedom today, if they are to preserve for tomorrow their greater freedom to practice medicine as independent professionals."

It is imperative that we join and maintain membership in our District and State Medical Association as well as the AMA. Through these organizations we will have "collectivization."

As all of you who receive THE JOURNAL are SDSMA members I will not dwell on that, but will urge membership in the AMA. With the dues increase this year it will cost approximately one dollar a day to belong to the AMA. This seems reasonable enough for representation on a national level, which is needed greatly.

In closing I would again recommend reading the article by J. Paige Clousson in the June 21, 1985 AMA NEWS.

R. G. Gere, M.D.

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SEX		
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Female	11	6.4
Not Rep	0	0
ABFP DIP		
Yes	132	76.3
No	41	23.7
FELLOW		
Yes	76	43.9
No	97	56.1
GRADUATE		
US Med	162	93.6
FMG	11	6.4
Not Rep	0	0
FP RES GRAD		
Yes	56	32.4
No	117	67.6
INTERNSHIP		
1 Year	86	49.7
2 Years	5	2.9
3 Years		.0
Not Reported	82	47.4
FAM PRAC RESIDENCY		
1 Year	2	1.2
2 Years	4	2.3
3 Years	53	30.6
4 Years		.0
5 Years		.0
6 Years		.0
Not Reported	114	65.9
FACULTY MEMBER		
No	29	16.8
Yes-Full Time	8	4.6
Yes-Part Time	37	21.4
Yes-Volunteer	58	33.5
Yes-Part Time & Vol.	2	1.2
Yes-Time Not Reported		.0
Not Reported	39	22.5
FEDERAL GOVERNMENT		
Not Federal	129	74.6
Federal	5	2.9
Not Reported	39	22.5
LOCAL GOVERNMENT		
Not Local Gov't	129	74.6
State, City or County	5	2.9
Not Reported	39	22.5
	168	**100.0**
PROFESSIONAL ACTIVITY		
Administration	3	1.8
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	120	**92.5**
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As a further protection for physician peer reviewers, SDFMC has in effect a liability insurance policy covering physician advisors and consultants with respect to their peer review activities. This protection is probably superfluous in view of the federal and state legal protections, but is still provided to reassure our physician members.

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Gary R. Leonardson, Ph.D.†
Donald G. Brekke‡
Doneen B. Hollingsworth§

ABSTRACT

The results of a survey, and demographic and academic information on 149 graduates from the University of South Dakota School of Medicine from 1980 to 1983 are reported. The study was designed to determine if academic, perception, and demographic variables were factors in distinguishing medical students by type of residency program. Those who selected family practice residencies tended to score higher on the new MCAT than did students choosing other types of residency programs. Both groups did equally well on Parts I and II of the National Boards, although family practice residents scored higher on the Pediatrics section of Part II of the National Boards. In addition family practice residents were more likely to plan to practice in South Dakota than were residents of other programs.

INTRODUCTION

The literature suggests many factors lead to a decision to enter family practice. Numerous studies have examined social and demographic factors possibly related to the decision by medical students to practice family medicine. Few reliable criteria have been identified to predict future career choices, or eventual practice locations of medical school applicants.[1] Research indicates that physicians prefer to practice in communities similar to those in which they were raised.[2,3,4,5] Cullision, et al., found that combining a physician of nonmetropolitian background with the specialty choice of family medicine has a cumulative effect, two-thirds of this group choosing nonmetropolitan practice.[6]

Some literature has suggested students with low to average medical school aptitude are attracted to primary care specialties, while students of superior academic aptitude choose specialty careers.[7,8]. However, a majority of the articles provide evidence to the contrary.[1,7,9,10,11,12] These studies report few significant differences between family physicians and other physicians in regard to undergraduate GPA, medical school GPA, MCAT scores, and scores on Parts I, II, and III of the NBME examinations. Burkett and Gelula reported . . . "like the other specialties examined here, family practice appears to be appealing to students who represent the full range of variation in academic performance and intellectual ability."[7]

The significance of a family practice curriculum must not be overlooked. Goldsmith [13] studied the relationship between the administrative status of family practice (department, division, or normal unit) and the selection of a family practice residency. Schools in which family medicine had departmental status graduated a significantly higher percentage of students who chose family practice residencies than did those without an official program, or a different program structure. The author stated, "Schools with family practice departments may be able to influence admissions policy, for curriculum time, and arrange more time for teaching and counseling. Also departments may produce better models of a family prac-

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tice residency program."[13]

South Dakota has among the lowest number of physicians per capita, in the United States. Other rural states, or rural areas in other states, continue to have a shortage of physicians. One of the goals of the University of South Dakota School of Medicine is to provide the state with an adequate number of primary care physicians. One way to do this is to identify students interested in family practice. The purpose of this study was to determine if academic, perceptual, and demographic factors were significant in distinguishing the type of residency program selected (i.e., family practice or any other by former USD medical students).

METHODS

The four year graduates of the University of South Dakota School of Medicine from 1980 to 1983 were surveyed for their perception as to how well the School of Medicine prepared them for their residency programs. In addition, demographic and academic data were obtained from the Office of Student Affairs, USD School of Medicine.

Questionnaires were sent to 192 former students who graduated from 1980 to 1983. Over three-fourths (149 or 78%) responded to the original letter and questionnaire, or a follow-up letter and second, identical questionnaire. All of the 149 returned questionnaires were sufficiently complete for the data analysis. The return rate was evenly spread among the four graduating classes with 26.8% coming from the class of 1980, 26.8% from 1981, 23.5% from 1982, and 22.8% coming from the class of 1983. Most (77.9%) of those responding were currently in a residency program.

RESULTS

Results are reported by comparing those who had completed, or are currently in a family practice residency with those who had completed, or are currently in other residency programs. Only one of the students in a family practice residency had a physician father; thirty-six of those entering other residency programs had fathers who were physicians. There was a significant difference (Chi-square = 5.754, p = .0165) in these rates. Family practice residents were much less likely to have a physician father than residents in other specialties.

Those individuals in a family practice program had scored significantly higher on five of the six subtests of the Medical School Admissions Test (MCAT). There were no significant differences between groups on the quantitative MCAT test, by student's t-test. There was only one significant difference in the two groups with regard to mean scores on the National Board of Medical Examiners (NBME). Family practice residents average 506 versus 447 for others on the pediatrics section of the NBME. These values were significantly different (probability = .0414).

The Family Practice residents were compared with others by perception of the training they received in the USD undergraduate medical program. The scale was a 7-point instrument with 1 representing a low score, 4 a medium score, and 7 a high score. Both groups rated their preparation at USD School of Medicine above average but family practice residents had a higher average (5.93) than did residents (5.21) in other specialties (probability = .0036). When asked to compare their training with training in other medical schools, both groups gave the USD School of Medicine good marks. Family practice residents (5.73) were again significantly higher (probability = .0197) than the ratings by other residents (5.21). Former students, in family practice residencies, perceived pediatrics, obstetrics and gynecology, psychiatry, and family medicine clerkships to be important in preparing them for residency training. Other residents rated these clerkships significantly lower in preparing for residency training. (Table I).

TABLE I

Comparisons of Perceived Importance of Selected Clerkships Between Family Practice Residents and Other Residents.

Clerkship	Mean Perceived Importance Values	
	Family Practice Residents	Other Residents
Pediatrics	5.38	3.79
Obstetrics and Gynecology	5.88	4.78
Psychiatry	5.35	3.96
Family Medicine	6.15	4.47

All differences are significant at less than 0.05 level.

Family practice residents were more likely to plan for practice in South Dakota than were others. Of the family practice residents, 62.5% indicated South Dakota as the state where they planned to practice compared to 38.8% of other residents. Of the family practice residents 70% mentioned South Dakota, in combination with other geographical areas. The family practice residents indicated a preference for smaller-sized communities in which to practice.

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Reuben Bareis, M.D., Rapid City, explained "living wills" at a meeting of the West River Chapter, American Association of Medical Assistants.

* * *

A. P. Reding, M. D. was recently honored by the community of Marion at an open house in recognition of 50 years of practice in that community.

* * * *

At the annual meeting of the South Dakota State Society of Physicians and Surgeons, **Dr. Robert Williams** of Rapid City was re-elected president. Other officers elected were: **Dr. Chet Ridenour** of Sturgis, vice president and **Dr. David Lauer** of Sturgis, secretary-treasurer.

* * * *

Dr. Steven Krause has joined the Yankton Clinic. A native of Yankton, Dr. Krause received his MD degree from Vanderbilt University in Tennessee and his internship was served at Maricopa County General Hospital in Phoenix, AZ. Dr. Krause's wife's name is Audrey.

* * * *

Doctors **Larry Ebbert, Harold Fromm, Raymond Burnett, Kenneth Vogele, Joseph Kovarik, Elmo Rosario** and **Marc Boddicker** participated in a workshop co-sponsored by Rapid City Regional Hospital and the South Dakota Division, American Cancer Society.

* * *

South Dakota Blue Shield elected officers at their annual meeting held in Sioux Falls. Re-elected to the Board were: **Drs. Judson O. Mabee,** Mitchell; **Wm. J. McDermott,** Brookings; **Denny G. Ortmeier,** Sioux Falls; and **R. E. VanDemark,** Sioux Falls. **Roscoe Dean, M.D.,** Wessington Springs was elected chairman of the board. Other physician members of the board are: **Drs. Robert Bloemendaal,** Rapid City; **Winston Odland,** Aberdeen; and **John J. Stransky,** Watertown.

* * * *

John Robbins, M.D. has opened his urology clinic in Huron. Dr. Robbins is a native of Boise, Idaho; he received his MD degree from the University of Texas at Houston; he interned in general surgery at the University of Texas at Houston; and did his urology residency at the University of Iowa.

* * * *

W. Nicol Guddal, M.D. of Watertown has completed continuing education requirements to retain active membership in the American Academy of Family Physicians.

* * * *

The Mitchell Family Medical and Surgical Clinic has announced that **Martin J. Christensen, M.D.** a family practitioner, has been added to their staff. A native of Sturgis, Dr. Christensen received his MD degree from the USD School of Medicine. He completed 3 years of internship and residency at Womack Army Community Hospital at Ft. Bragg, NC. He is board certified and a Fellow of the Amer-

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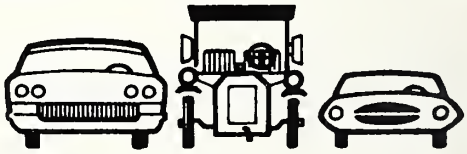

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ican Academy of Family Practice. Before coming to South Dakota, Dr. Christenen practiced at the Bayne Jones Army Hospital at Ft. Polk, LA.

He and his wife Deborah have three children.

* * * *

Bartron Clinic, Watertown, has added two new doctors: **Dr. Stephen D. Gibbs,** dermatology and allergy; and **Dr. Frank B. Harding,** obstetrics and gynecology.

Dr. Gibbs, a native of St. Paul, Minn., received his MD degree from Creighton Univ. in Omaha in 1970. He served a one year internship in Pittsburgh, PA and then served a tour of duty in Vietnam as an Army flight surgeon. He completed a dermatology residency at Walter Reed Army Medical Ctr. in Washington, DC. Dr. Gibbs has practiced in Pennsylvania for the past seven years, prior to coming to South Dakota.

He and his wife Linda have 3 children.

Dr. Harding, a native of Washington, first received a Ph.D. in clinical psychology from the Illinois Institute of Technology in Chicago in 1971 and practiced in Eagle Butte with the PHS. He received his MD degree in 1978 from the University of Minnesota. He served an internship at the Jewish Hospital in St. Louis, Missouri, and a residency at the Univ. of Illinois in Chicago. He has been serving with the U.S. Navy at Great Lake, Ill. before coming to South Dakota.

Dr. Harding and his wife Karen have one child.

* * * *

Program speakers for the area nurse anesthetists meeting held in Yankton included **David Potas, M.D.** and **William Quick, M.D.,** both of Yankton, as well as others from throughout the United States.

* * *

Dr. Richard McClaflin, Watertown was elected president elect of the American Heart Association, Dakota Affiliate Board of Directors. Other South Dakota physicians elected to this board were: **Dr. Howard Burns,** Sioux Falls; **Charles Hart,** Rapid City; **James Jackson,** Rapid City; and **Robert Talley,** Sioux Falls.

* * * *

David W. Dawson, M.D., a native of Oklahoma, is the third physician to be associated with the Lake Area Clinic and Hospital in Webster. Dr. Dawson received his MD degree from Howard Univ. College of Medicine, Washington, DC in 1981. He has one year of a pediatric residency at Children's Mercy Hosp., Kansas City and a family practice residency in Barberton, Ohio.

Dr. Dawson and his wife Deborah have no children. Dr. Dawson's outside interests are hunting, cattle, horses and sports.

* * * *

Physicians and their wives from the Watertown, Brookings and Madison area attended a medical conference held recently in Lake Preston. The conference was organized by **Dr. Neyton Baltodano,** Lake Preston, and featured **Dr. Stephen Gehring** of Watertown who spoke about new urology techniques.

* * * *

Vision Care Associates has announced that **Dr. Wayne Snyder** has joined their Aberdeen office in the practice of ophthalmology. He will also serve the Vision Care office in Redfield, Miller, Britton, and Ashley, ND. Dr. Snyder, a native of South Dakota, first received a BS in education in 1974 and taught math for 3 years. He then attended USD School of Medicine and received his MD degree in 1981. He served his internship at St. Joseph Hospital, Marshfield, Wisc. and just recently completed a three year residency at the Univ. of Missouri.

Dr. Snyder and his wife Gail have 4 children.

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ALUMNI FOUNDATION — ENDOWMENT ASSOCIATION

Often times there are questions about differences between the South Dakota Medical School Endowment Association and the USD School of Medicine Alumni Foundation. Both were founded for the benefit of the Medical School and its students; however, each has its own distinct goals and objectives. Hopefully the following will clarify the difference in activities between these two organizations.

ENDOWMENT ASSOCIATION

1. Primary activity is provision of loans to USDSM students.

ALUMNI FOUNDATION

1. Supports activities and projects recommended by the administration and faculty of USDSM.
2. Supports USDSM Alumni activities and services.
3. Supports USDSM student activities and services.

Additional information can be obtained by contacting:

South Dakota Medical School Endowment Association
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Anesthesia and Surgery During Pregnancy

Edward F. Anderson, M.D.*

ABSTRACT

Each year many pregnant patients are undergoing surgery some of which is quite complex. The basic objectives of the anesthetic management of pregnant patients are presented. These objectives include the maintenance of maternal safety, the prevention of premature labor, and the avoidance of any technique, drug, or situation that threatens fetal well being.

Elective surgery should be done after delivery, however, if this is not possible, delay past the critical first trimester is preferable. At the present time there is no clear cut evidence that any anesthetic technique is teratogenic. Maternal hypoxia, hypocarbia, and hypotension should be avoided during the procedure to minimize the development of fetal hypoxemia. An understanding of the physiologic changes that occur during pregnancy is imperative when caring for the pregnant patient undergoing anesthesia and surgery.

The incidence of surgery during pregnancy has been reported to range from 0.3 to 1.6%. Shnider and Webster report that one in every 116 pregnant women needs a major surgical anesthetic.[1] There have been other reports that as many as 2% of all operations carried out in women occur during pregnancy. It has been estimated that up to 50,000 pregnant women undergo non-obstetric operations each year. The anesthetic care of the pregnant surgical patient is special because one is anesthetizing not only the mother but also the fetus. Anything that will affect the mother will also affect the fetus. Therefore, the basic objectives of the anesthetic management of the pregnant woman undergoing surgery are: 1) an understanding of the physiologic changes that occur during pregnancy, 2) maternal safety, 3) the avoidance of teratogenic drugs, 4) the avoidance of intrauterine fetal asphyxia, and 5) the prevention of premature labor.[2]

The physiologic changes of greatest relevance to the anesthesiologist and surgery will be discussed. Alveloar ventilation is increased about 25% by the fourth month of pregnancy and rises progressively to 70% at term. End tidal CO_2 tension falls to 33 mmHg by the third month of pregnancy. Functional residual capacity is decreased 10% at six months and 20% at term. Oxygen consumption increases significantly during mid-pregnancy due to the developing placenta, fetus and uterine muscle. Inhalation anesthetic requirements are decreased up to 40% during the second trimester because of the above. Induction of or emergence from anesthesia occurs more rapidly due to the increased ventilation and decreased functional residual capacity. The likelihood of anesthetic overdose is increased due to the above rapid changes. In addition, the increased oxygen consumption and decreased functional residual capacity are prone to make the pregnant patient more hypoxic secondary to respiratory obstruction or difficult endotracheal intubation. Marked hyperventilation by the mother or anesthetist during a surgical procedure will cause uterine arterial constriction with a decrease in uterine perfusion and, possibly, secondary fetal asphyxia.[2]

Cardiac output and stroke volume are increased 35-40%, and blood volume is increased 20-30% by 24 weeks gestation. The hyperdynamic cardiovascular system may adversely affect the pregnant patient with valvular heart disease or preexisting hypertension. Inferior vena caval obstruction can occur from the second trimester on despite the apparently small size of the uterus. This may be manifested in the pregnant patient as hypotension and nausea when assuming the supine position. Because of epidural venous engorgement secondary to obstruction of the inferior vena cava by the gravid uterus, the size of the subarachnoid and epidural space is decreased, and the amount of local anesthetic used for spinal or epidural anesthesia should be reduced by 25-30% from mid-pregnancy to term. Comperssion of the aorta by the gravid uterus may result in uterine, renal

Medical Director, Anesthesiology, Sioux Valley Hospital, Sioux Falls, SD.

and femoral arterial hypoperfusion. Fetal hypoxemia and metabolic acidosis may result.[2]

During pregnancy, the gradually enlarging uterus displaces the stomach, alters the angle of the gastroesophageal junction, and predisposes the patient to passive regurgitation. The symptoms of esophageal reflux are common throughout pregnancy. Plasma gastrin levels are elevated throughout the gestation, but especially high in the second half and are associated with increasing gastric acidity as well as a prolonged emptying time from the stomach. The above mechanical and chemical events predispose the pregnant surgical patient to a greater risk of development of a chemical pneumonitis.[2]

Teratogenicity may be induced at any stage of gestation by exogenous agents and detected at birth or later. To produce a defect, a teratogenic drug must be given in an appropriate dosage during a particular developmental stage of the embryo in a species or individual with a particular genetic susceptibility. According to Tuchmann-Duplesis the critical time for the development of the brain ranges from 18-38 days, the heart 18-40 days, the eye 24-40 days, the limbs 24-36 days, the gonads 37-55 days, the male genitalia 45-90 days and the female genitalia 50-150 days. The point at which the critical time ends is speculative, however, it is felt that there is less teratogenic risk after the first trimester.[3] The problem in many studies is the fact that drugs may have a marked effect in one species and little teratogenic effect in another. Even in the same species different strains may respond differently. Drugs such as anesthetic agents may have a marked effect at one stage of fetal development and little or no effect at another stage. During the initial pre-implantation period a teratogen will usually kill the fetus. Later during embryo-genesis that same teratogen may result in a major congenital malformation. Still later on that same agent may have little or no effect on the fetus.[4]

Smith and Erikkson state that almost all commonly used anesthetics and premedicant drugs are teratogenic in some animal species.[4,5] The applicability of these animal studies to humans, however, has not been determined. Pregnant animals exposed to clinical concentrations of anesthetic gases have increased rates of fetal deaths and offspring with congenital defects.[4,5,6,7] Since the clinical concentrations of these agents may also depress respiration and the cardiovascular system, the exact mechanism of teratogenicity of inhalation agents is uncertain. According to Brodsky a study by Lane et al is the only study which has demonstrated that nitrous oxide has teratogenic properties independent of its physiologic side effects.[8,9] There are other drugs which are administered in the perioperative period which may be as potentially dangerous as the inhalation anesthetics to the fetus. Examples of this are barbiturates which can produce congenital malformation in mice as well as diazepam which is associated with cleft palate deformities in children of pregnant women.[10] A study by Milkovich demonstrated an increased incidence of anomalies when meprobamate or chlordiazepoxide was prescribed during the first six weeks of gestation. When these tranquilizers were administered later in pregnancy, no differences were seen in the incidence of anomalies compared to other medications.[11]

As mentioned, the use of anesthetics on animals has resulted in evidence of teratogenicity. When 80% nitrous oxide was administered to chicken eggs for the entire course of incubation only 10-20% hatched and had a high incidence of neurologic defects.[12] Halothane in low concentrations for 12-48 hours produced numerous anomalies in rat fetuses.[13] Other investigators, however, using rats, rabbits and mice have not shown teratogenic effects of halothane.[2] Methoxyflurane 0.5% administered for six hours to incubating eggs resulted in a high incidence of embryonic deaths and multiple anomalies in the survivors. Diethylether, cyclopropane, and fluroxine have been shown to be teratogneic in chick embryos.[14] Local anesthetics which act by stabilizing cell membranes conceivably could affect cell mitosis in embryogenesis. Bupivacaine, etidocaine and prilocaine injected into rats or rabbits have not demostrated teratogenicity.[15] These drugs, however, have not been extensively studied.

Although it can be shown from animal studies that maternal exposure to general anesthesia during a critical period in gestation is potentially dangerous for the developing fetus, there have been few clinical attempts to correlate anesthesia and operation during pregnancy with fetal mortality, premature labor and birth defects in humans. Large retrospective studies in the United States and Great Britain suggested that female anesthesiologists and wives of male anesthesiologists have higher rates of spontaneous abortion and that their babies are more likely to develop congenital defects than the offspring of non-operating room physicians.[15] Operating room nurses and nurse anesthetists were also surveyed in the American study and found to have offspring with significantly higher rates of congenital anomalies. In addition, there was an increase of 25% in the incidence of anomalies in offspring of the wives of male anesthesiologists compared to those of male pediatricians.[16,17] To prevent chronic exposure to trace amounts of anesthetic gases or vapors by operating room personnel, scavenging systems should be installed.

Smith, in a retrospective study, reviewed the obstetric records of 18,493 pregnant women. Sixty-

seven of these had surgery during pregnancy with 24 receiving general anesthesia and 43 regional anesthesia. Two fetal deaths occurred among the 10 women who had an operation during the first trimester. One of these deaths was due to prematurity in an infant delivered by C-section following maternal death from a brain abscess. The other fetal death associated with first trimester surgery occurred during an appendectomy under spinal anesthesia. There were five fetal deaths among the 45 women who had surgery during the second trimester. Four resulted from premature delivery of an immature fetus after surgery for cervical incompetence under regional anesthesia. There were no listed fetal deaths in the group receiving general anesthesia during the second trimester. In addition there were no reported congenital anomalies in women having surgery during their first trimester.[18]

A retrospective study by Shnider and Webster involving 9,073 obstetric patients compared 147 women having surgery during gestation with a control group of 8,926 pregnant women having no surgery. Sixty patients received general anesthesia, 18 spinal or epidural anesthesia, 50 local infiltration, and 19 no anesthesia for their surgery. Among the 47 women having surgery during the first trimester, four fetal deaths (8.5%) occurred. Six fetal deaths (10.3%) occurred among the 58 women having surgery during the second trimester. All the fetal deaths associated with second trimester surgery occurred in 18 women having surgery for cercival incompetence. No fetal deaths occurred among 29 patients having major extraperitoneal surgery including a variety of orthopedic, neurosurgical, thoracic, vascular and general surgical procedures under either general or spinal anesthesia. This compared with a perinatal mortality rate of 2%. 9.3% of offspring of pregnant patients having surgery during the first trimester and 11.5% with surgery during the second trimester had congenital birth defects compared to a control of 6.0%.

In 1981 Brodsky et al reported a survey based on information from a total of 12,929 pregnancies. One hundred eighty-seven patients (1.4%) received general anesthesia during the first trimester whereas 100 patients (0.8%) received it during the second trimester of pregnancy. Those women having surgery during the first trimester had a 50% greater incidence of fetal death (8%) than the rate of first trimester miscarriages in the nonoperative control group (5.1%). There was a 6.9% incidence of fetal death following anesthesia and surgery during the second trimester compared to a spontaneous abortion rate of 1.4% in the control group. There was no significant increase in the incidence of congenital anomalies in the offspring of women having surgery during early pregnancy.[19]

The problem with the above studies is that the number of pregnant women having surgery was too small to determine the teratogenicity of anesthesia in general or a particular agent or technique. For a specific anesthetic agent to double an anomaly that occurs spontaneously once in every 1,000 pregnancies, over 23,000 women would have to receive that agent for a statistically significant increase in the anomaly to occur according to Sullivan.[20] To date, the largest epidemiologic series that examined the problem of teratogenicity was based on a total of only 287 general anesthetics in which a variety of different agents had been used.[19] In many animal species congenital anomalies have been reported after exposure to hypoxia during organogenesis. In addition, the possible teratogenicity of hyperoxia is controversial. Brief exposures to hypoxia, hyperoxia, hypercarbia and hypocarbia have not proven to be teratogenic in humans although isolated case reports alleging such an association have been published. Chronic hypoxemia as occurs in people living at high altitudes is not associated with an increased incidence of anomalies.[21] Furthermore, there are many factors encountered in a pregnant patient having surgery which have been suggested as being potentially teratogenic. Such factors include maternal anxiety and stress, internal immobilization, and mechanical trauma, such as falls, blows to the abdomen, automobile accidents and bullet wounds. The significance of these factors as teratogens is uncertain as large epidemiologic studies have not been done.[2]

Fetal death after surgery in a pregnant patient more often is due to premature labor. Anesthesia has often been implicated as the cause of premature labor in the immediate postoperative period, however, the results of studies of surgery during pregnancy do not substantiate this impression.[22] In the Smith study 80% of the fetal deaths during second trimester surgery were due to premature labor following procedures for incompetent cervix. There was a 25% incidence of abortion and stillbirth following appendectomy compared to 4% in other intraperitoneal operations.[18] Thirteen of 147 pregnant patients (the majority having surgical repair of an incompetent cervix) in Shnider and Webster's retrospective study experienced labor within two weeks following surgery. When this subgroup of women receiving a cervical cerclage was eliminated, the incidence of premature labor between the surgical group and the nonoperative control group was insignificant.[1] According to Brodsky, preoperative pathology, not anesthesia, is the major determinate of postoperative premature labor. No anesthetic agent or technique has been associated with an increased incidence of

postoperative premature labor.[8]

The basic objectives in the anesthetic management of the pregnant patient are maternal safety and the avoidance of any technique, drug, or situation that threatens fetal well-being. Surgery and anesthesia may interfere with maternal and fetal physiology and result in harm to the fetus even though there is no direct embryo-toxic affect of the anesthetic agent itself.[23] When at all possible Shnider recommends deferring elective surgery until after delivery when the physiologic changes of pregnancy have returned toward normal. All women of child-bearing age who are scheduled for elective surgery should be carefully questioned regarding the possibility of pregnancy. When the operation is essential but can be delayed without increasing the risk of permanent disability, the surgical procedure should be deferred until the second or preferably third trimester. It must be restated that at the present time no anesthetic drug, either premedicant, intravenous induction agent, inhalation agent, or local anesthetic has been proven to be teratogenetic in humans. However, it is imperative to minimize or eliminate fetal exposure to drugs or potentially harmful situations during the vulnerable first trimester. When the operation is an emergency and needs to be done during the first trimester, the surgery would be more ideally performed under regional anesthesia, if possible, since the teratogenicity of local anesthetics in animals or humans has not been reported.[2]

Hypotension in the pregnant surgical patient must be avoided. Any anesthetic technique or agent that decreases placental perfusion pressure or increases maternal vascular resistance will redistribute blood flow away from the placenta resulting in fetal hypoxemia which may in turn result in fetal death or malformation. Maternal hypotension, whether due to anesthesia, aortocaval compression, hemorrhage or hypovolemia may reduce uterine blood flow with possible fetal damage. According to Brodsky, the pregnant patient should not be transported or placed on the operating table in the supine position from the beginning of the second trimester. Uterine displacement should be used to minimize the risk of aortocaval compression.[23]

When possible in early pregnancy, a spinal anesthetic should be used since this will result in less fetal exposure to a local anesthetic drug compared to other regional blocks. If a spinal or epidural anesthetic technique is employed, the possibility of maternal hypotension can be minimized by the intravenous infusion of a liter of crystalloid prior to the administration of the block. If hypotension does occur, ephedrine is the vasopressor of choice and should be administered promptly. Its predominant mode of action is cardiac rather than vasoconstriction and results in increased uterine perfusion along with the increase in maternal blood pressure. General anesthesia should always be preceded with 100% oxygen for denitrogenation in order to minimize the chances of maternal and fetal hypoxia during induction and intubation. The application of cricoid pressure during induction of general anesthesia will further reduce the risk of aspiration for the mother and subsequent hypoxia for the fetus.

During the preoperative visit great effort should be made to allay maternal anxiety and apprehension since this may result in the release of endogenous catecholamines causing in turn uterine vasoconstriction and decreased perfusion. If premedication is necessary, Shnider states that barbiturates are preferable to mild tranquilizers such as diazepam or meprobamate.[2] If a drying agent is needed, glycopyrrolate should be considered since, unlike atropine and scopolamine, it does not cross the placenta. In the past when general anesthesia was indicated during the first and possibly second trimester, some authors have recommended using a balanced, intravenous anesthetic technique in lieu of an inhalation technique because of the halogenated agents' association with teratogenicity in animals.[24] However, there is no proof at present that any well-conducted technique or agent is superior to any other. Drugs with a history of safe usage over the years include thiopental, succinylcholine, d-tubocurarine, pancuronium, morphine, meperidine, fentanyl, nitrous oxide and halothane. Halothane's relaxing effect on the uterus may be desirable for operations involving the pelvic organs or the uterus itself. Inhalation agents such as halothane, enflurane, and isoflurane decrease uterine tone and inhibit uterine contractions. For this reason these agents have been recommended for use during non-obstetric surgery in late pregnancy to reduce the chances of premature labor when uterine manipulation is anticipated.[2] In a fetus of low gestational viability, this may protect the pregnancy. Ketamine in low doses is preferable to thiopental as an induction agent in the presence of severe hypovolemia since it is associated with cardiovascular stability. At higher doses ketamine can increase uterine tone and endanger the fetus.[23]

During general anesthesia avoidance of hypoxia and hypocarbia is mandatory. Use of the left lateral tilt during the second and third trimester will assist in avoiding aortocaval compression. Ideally, continuous fetal heart rate monitoring during surgery should be employed after the 16th week of gestation. This may provide an indication of abnormalities in maternal ventilation or uterine perfusion. Uterine activity should also be monitored continuously during the postoperative period to detect the onset of

premature labor.[2] Slow intravenous administration of anticholinesterase drugs, such as neostigmine, to reverse non-depolarizing muscle relaxants should be given to minimize acetylcholine release resulting in a theoretical increase of uterine tone and possible stimulation of premature labor. Whichever anesthetic technique is used, a thorough understanding of maternal physiology during pregnancy and the physiologic effects of the agents and techniques employed is imperative in order to provide optimal care for both mother and fetus.

CONCLUSION

Many complex operations are now being performed on pregnant surgical patients with varying degrees of medical illness. During the first and second trimester of pregnancy there seems to be an increased incidence of fetal loss following surgery and exposure to anesthesia. Whenever possible, therefore, surgery should be delayed until after delivery of the infant or third trimester. Although at the present time there is no clear cut evidence that any anesthetic agent or technique is teratogenic, techniques should be employed which limit the exposure to the fetus especially during the critical first trimester. More likely the patient's preexisting state of health is directly related to the outcome of her pregnancy. The major risk of anesthesia to maternal well being and fetal outcome appears to be related to the development of hypoxia, hypocarbia, and/or hypotension. A thorough understanding of maternal physiology during pregnancy and the effects secondary to drug or anesthetic administration and surgery is imperative when caring for the pregnant surgical patient.

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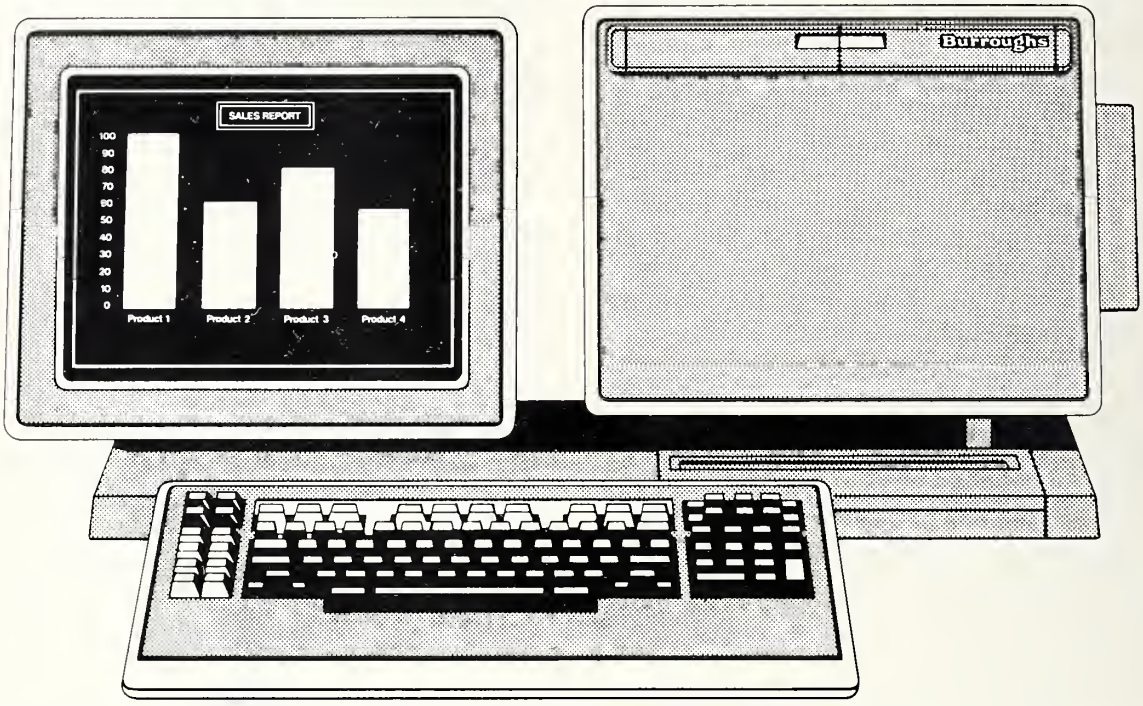

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The Executive Commission of the State Medical Association extended me an invitation, as president of the Auxiliary, to attend their 1985 summer retreat. Time was designated on the agenda for discussion concerning Auxiliary activities and interests.

The Medical Auxiliary in South Dakota is exceptionally fortunate. Many auxiliaries and medical societies do not recognize the mutual benefits that can result from this natural coalition.

Auxiliary projects which have the backing of the medical society are taken more seriously by the public. Medical association members lend expertise to auxiliary projects, especially in the health field areas.

On the other hand, the auxiliary is a ready-made source of people-power. Contacts made within the community by members over the years are invaluable. Auxilians occupy key positions in various civic organizations, which are potential allies to medical causes when properly informed. Members can serve as mediators between physicians and the public. Through community relations, posters and workshops, auxilians can help inform the community that the physician is an educator, a healer and that Doctors really CARE.

At the House of Delegates meeting of the South Dakota State Medical Association on Sunday, June 9, a resolution was adopted unanimously to recognize the longevity of the Auxiliary and the dedication of its members.

The Auxiliary gratefully:

—Thanks the Association for this honor.

—Recognizes the Association's generosity towards us by their allocation of funds for the printing of our pre and post convention auxiliary newsletter.

—Welcomes and acknowledges the cooperation that your medical society staff extends to us so graciously and willingly.

—Appreciates having this opportunity to inform you and keep you updated on our priorities and projects through this publication.

The Auxiliary has your best interests as our objectives and is dedicated to the same principles as the medical profession. Through the Auxiliary and the Medical Association's combined efforts and cooperation we have been and are continuing to function as a team! LONG LIVE THE TEAM!!

Shirley Ryan

Shirley Ryan, President
South Dakota State Medical Association Auxiliary

There is hardly anything in the world someone cannot make a little worse and sell a little cheaper, and the people who consider price only are this man's lawful prey!

Wyeth **Jerry Maginn**

October

Office Emergencies for the Primary Care Physician, Marriott Hotel, Austin, TX, Oct. 4-5. Fee: $85. 7½ hrs. AAFP credit. Contact: Jaye Isham, Off. of CME, Scott and White, 2401 S. 31st St., Temple, TX 76508. Phone: (817) 774-3774.

Group Psychotherapy, Seeley Conf. Ctr., Menninger Found., Topeka, KS, Oct. 9-12. Fee: $265. 21 hrs. AMA Category 1 credit. Contact: Brenda Vink, Div. of Cont. Ed., The Menninger Foundation, Box 829, Topeka KS 66601. Phone: (913) 273-7500, ext. 5992.

37th Annual AFFP Convention, Anaheim Conv. Ctr., Anaheim, CA, Oct. 10-13. 33 hrs. AMA Category I & AAFP credit. Contact: Wm. R. DeLay, AAFP, 1740 W. 92nd St., Kansas City, MO 64114. Phone: (800) 821-2512.

Exercise Stress Testing in the 80's: New Clinical Techniques and Applications, Radisson So. Plaza, Minneapolis, MN, Oct. 11-12. Contact: Medical Graphics Corp., 501 W. County Rd., E., St. Paul, MN 55126. Phone: (800) 328-4138.

Menopause: Consequences and Treatment Strategies, Fort Magruder Inn, Williamsburg, VA, Oct. 23-27. Fee: $300. 16 hrs. credit. Contact: Charlene Davis, Off. of CME, Scott and White, 2401 S. 31st St., Temple, TX 76508. Phone: (817) 774-2821.

12th Annual Perinatal Seminar, Frank W. Mayborn Conv. Ctr., Temple, TX, Oct. 24-25. Fee: $90. 10.7 hrs. AMA Category I & AAFP credit. Contact: Charlene Davis, Scott and White, 2401 S. 31st St., Temple, TX 76508. Phone: (817) 774-2821.

Stress, Impairment and the Resident, Harrison Conf. Ctr., Lake Bluff, IL, Oct. 24-26. 8 hrs. AMA Category I credit. Contact: Mary Dybas, U. of Ill. at Chicago Conf. & Instit., 919 S. Wood St., 2 North, Chicago, IL 60612. Phone: (312) 996-8025.

Promoting Healthy Lifestyles for Pregnant Women, Earle Brown Ctr., U. of MN, St. Paul, MN, Oct. 25. Fee: $45. 7 hrs. AMA Category I credit. Contact: Kathleen Fritz, CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

53rd Annual Postgraduate Assembly, Red Lion Inn, Omaha, NE, Oct. 28-30. AMA Category I & AAFP credit available. Contact: Omaha Midwest Clinical Soc., 7363 Pacific St., Omaha, NE 68114. Phone: (402) 397-1443.

51st Annual Scientific Assembly, ACCP, New Orleans, LA, Oct. 28-Nov. 1. Contact: Education Dept., ACCP, 911 Busse Hwy., Park Ridge, IL 60068. Phone: (312) 698-2200.

Counseling for Relapse Prevention, Seeley Conf. Ctr., Menninger Found., Topeka, KS, Oct. 31-Nov. 1. Fee: $75. 13 hrs. AMA Category 1 credit. Contact Donna Smith, Div. of Cont. Ed., The Menninger Foundation, Box 829, Topeka, KS 66601. Phone: (913) 273-7500, ext. 5992.

November

ENT/Opthalmology for the Primary Care Physician, Marriott Hotel, Austin, TX, Nov. 1-2. Fee: $85. 7½ hrs. AAFP credit. Contact: Jaye Isham, Off. of CME, Scott and White, 2401 S. 31st St., Temple, TX 76508. Phone: (817) 774-3774.

Pediatrics for the Primary Care Physician, Marriott Hotel, Austin, TX, Nov. 15-16. Fee: $85. Contact: Jaye Isham, Off. of CME, Scott and White, 2401 S. 31st St., Temple, TX 76508. Phone: (817) 774-3774.

Primary Care Update, Marriott Hotel, New Orleans, LA, Nov. 18-21. Fee: $185. 24 hrs. AMA Category I & AAFP credit. Contact: Interstate Postgraduate Med. Assoc., Box 1109, Madison, WI 53701. Phone: (608) 257-6781.

December

Coronary Heart Disease, Sheraton Midway Hotel, St. Paul, MN, Dec. 5-7. Contact: CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612) 221-3992.

Advanced Trauma Life Support Provider Course, Orr Major Hall, U. of Kans. Med. Ctr., Kansas City, KS, Dec. 19-20. 16 hrs. AMA Category I & 15 hrs. AAFP credit. Contact: Jody Scott, Dept. of Surg., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913) 588-6124.

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed:

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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An Important Complication of Anticoagulation Therapy: A Case Presentation

Richard P. Holm, M.D., FACP*
Charlotte Roehr, M.D.†

ABSTRACT

Rasputin and the royal family of Russia were brought together early in this century by a clinical syndrome rare then, but more common today with the popular use of anticoagulation therapy. A modern-day case is presented of femoral neuropathy due to retroperitoneal bleeding (the so-called iliacus hematoma syndrome). Clues for diagnosis, medical and surgical treatment methods, as well as possible anatomical causes are discussed.

Femoral neuropathy due to retroperitoneal bleeding is an uncommon but significant complication of anticoagulation therapy. The significance of retroperitoneal bleeding can be illustrated historically by hemophiliac Alexis, the Crown Prince of Russia and son of Tsar Nicholas and Tsarina Alexandria. When Alexis was struck with this clinical entity, his condition progressively worsened and death drew near. In the midst of the preparations for her son's death, Tsarina Alexandria ignored the four prominent physicians hovering over her son and looked to the mystical Gregory Rasputin for help. His response, "Do not allow the doctors to bother him too much," appeared to lead to a reversal in Alexis' condition. From that point the sinister Rasputin became intimately involved with the royal family. He influenced responses of the Tsar to the political events in Russia, and therefore played an important role in setting the stage for the 1917 Russian Communist Revolution.[9] Not only is retroperitoneal bleeding probably significant in having formed history, but it represents an entity more common since the advent of anticoagulant therapy. In addition, the diagnosis can be made simply by taking a careful history and physical exam, if one is familiar with the clinical entity.

CASE REPORT

Subjective: A 61 year old newspaperman with chronic phlebitic syndrome and one episode of acute left femoral neuropathy, was admitted to the hospital April 15, 1985. His chief complaint was sudden

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severe pain of the thigh that awoke him in the night. This was worsened by any movement and touch, and was somewhat relieved by hot packs to the thigh. This discomfort did not follow injury to the area or recent unusual activity. In addition, he noted an unusually cold left foot. Treatment for his chronic thrombophlebitis since 1977 had been coumadin and kneehigh support stockings.

Important past history included bilateral inguinal herniorrhaphy in 1942, complicated by left leg thrombophlebitis and multiple hospitalizations for acute thrombophlebitis of the left leg. In 1979 the patient was placed on coumadin and in 1981 the patient developed the iliacus hematoma syndrome. The coumadin was stopped, however he was left with permanent hypoesthesia of the left anteromedial thigh, a weakened quadriceps muscle and no knee jerk. Due to an acute exacerbation of his thrombophlebitis in 1983, the coumadin was restarted. Prior to the present admission, the patient had had no change of the quadriceps function or sensory loss since 1981.

Objective: The patient preferred positioning himself with the left leg elevated and the left hip and knee flexed. The left foot was markedly colder than the right. Cyanosis involving the left leg was demonstrated despite brisk and symmetrical femoral, posterior tibial, and dorsalis pedis pulses. Tenderness with palpation was noted over the anterior inner thigh near the groin, although no masses nor cords were palpable. There was no obvious bruising or discoloration. The left thigh measured 52 cm. and the right 49.5 cm. The knee jerk was 2/4 on the right and absent on the left, however ankle jerks were symmetrical, graded 2/4, and the plantar reflexes were down turning bilaterally. Hypoesthesia of the left anterior thigh and leg was demonstrated and strength testing was considered unreliable due to pain.

A venogram obtained the day of admission was read as follows: "There is an apparent occlusion of two of the three deep tibial veins near the trifurcation. The other deep tibial vein is patent and the remainder of the deep vessels from knee to pelvis are considered normal." Other data gathered on admission were as follows: Protime 18.3 seconds (control 11.9 seconds), hemoglobin 15.8 gms., hematocrit 48% and urinalysis with a trace of blood.

Hospital Course: With a differential diagnosis of post phlebitic syndrome versus possible acute thrombophlebitis, we elected not to change the medication but to treat conservatively with bed rest, elevation, heat and observation. After 24 hours, the pain completely resolved and both thighs measured 49.5 cm. The patient was kept at bedrest for another 24 hours, then gradual ambulation was allowed. Since ambulation was not painful and symptoms did not recur, he was dismissed April 18, 1985, three days after admission. He was advised to continue the coumadin at the same dose as before admission.

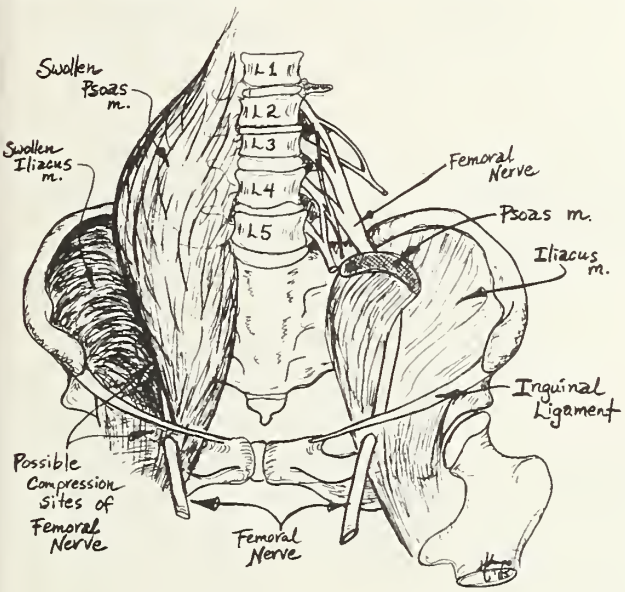
Our assessment at the time of discharge: We questioned our diagnosis of acute thrombophlebitis. Since the pain was in the thigh and the venogram showed occlusion in the calf, we suspected the venogram was falsely positive. Because he was clinically so much better, a decision for discharge was made, however, we were unsettled about the exact diagnosis of this case.

During a follow-up clinic visit, the patient complained of a weak left knee and the sensation, "of a tight band around my knee." Mild weakness had been a problem since 1981, with his initial episode of femoral neuropathy, however, during the previous week, the knee had been "giving way" with greater frequency, making walking difficult. Manual muscle testing demonstrated hip flexors and knee extensors graded as a 3 on the left and 4 on the right and there was an observable gait abnormality. Realizing the new femoral neuropathy, a more probable diagnosis of recurring iliacus hematoma syndrome was entertained. The coumadin was stopped.

Discussion: Anticoagulant therapy is used extensively in modern medicine. There is an overall 8% rate of hemorrhagic complications with long term anticoagulant therapy,[3] and the femoral nerve is most commonly involved when hemorrhage impairs a peripheral nerve.[6] It seems worthwhile to review this not-so-rare syndrome which is a reversable condition if correctly and quickly diagnosed.

The iliacus hematoma syndrome is commonly diagnosed late, despite its distinct clinical picture. The patient can present with acute lower abdominal, inguinal or hip pain which radiates into the anterior thigh. To reduce the pain, the patient positions her/himself with the affected leg externally rotated and flexed at both hip and knee. Signs of femoral neuropathy follow, with hypoesthesia over the anteromedial border of the thigh and medial border of the leg to the ankle. The quadriceps muscle becomes weak and the knee jerk is diminished or absent. A tender mass may be palpable in the iliac fossa or groin, and within two to three days ecchymosis can appear. An x-ray of the abdomen may reveal a decreased psoas shadow, and the IVP may show a laterally displaced kidney with mild hydronephrosis and a medially displaced ureter.[2] Wilbanks and Wilbanks reported two of three cases that had signs of diminished foot pulses and temperature changes suggesting arterial disease.[9] Hemaglobin and hematocrit values can be diminished from bleeding and even hypovolemic shock and death have been reported.[10]

The case presented here is unique. The clinical picture of newly occurring femoral neuropathy was obscurred by the patient's previous history of iliacus hematoma syndrome which had caused residual changes of hypoesthesia and absent knee jerk. His thigh pain was easily attributed to a radiologically supported case of acute thrombophlebitis or to just post-phlebitic syndrome. A stable hemoglobin and hematocrit, a lack of ecchymosis or palpable mass and a response to the conservative therapy supported our diagnosis. When the patient returned to the clinic with a new gait abnormality and obvious motor loss of the quadriceps muscle, our error was recognized and anticoagulant therapy was stopped. The diagnosis of iliacus hematoma syndrome was made after a delay of eleven days.



Anatomy: The femoral nerve is formed by the posterior division of the anterior primary rami of the second, third and fourth lumbar nerves. It descends within the fibers of the psoas muscle and merges from the muscle's lateral border. The nerve then runs in the groove between the iliacus and psoas muscle deep to the transversalis fascia. Finally, it passes beneath the rigid inguinal ligament. The femoral nerve innervates the iliacus, quadriceps femoris, sartorius and pectineus muscles. Its sensory distribution involves the anterior and medial aspect of the thigh and leg to the ankle.

Etiology and pathogenesis: Initial reports of the iliacus hematoma syndrome were felt to be a result of improper administration of subcutaneous heparin. If the injections were given too deep, a hematoma could form and spread along the needle track, into the retroperitoneal space.[8] This plausible explanation, however, does not account for the bleeding associated with oral anticoagulant therapy or with intravenous heparin therapy. The literature shows this malady is associated with age, hypertension, infection, as well as anticoagulant therapy.[2, 7, 8, 9, 10]

The femoral palsy is a result of ischemia of the nerve from compression between the distended iliacus and psoas muscle group, and the transversalis fascia,[2] or the inguinal ligament. Surgical explorations have confirmed both explanations.[1, 2, 8] Cadaver studies of Wells and Templeton show that less blood is needed to compress the nerve if the bleeding occurs in the iliacus muscle rather than the psoas muscle.[8]

Treatment and prognosis: Medical management is most common. This involves a) correction of coagulant abnormalities by administering appropriate antagonist and/or stopping anticoagulant therapy, and b) immobilization of the leg. Analgesics and other supportive measures including blood transfusions may be necessary. Wells and Templeton reviewed 24 cases treated this way and reported 17 (71%) good results, 6 (25%) poor results and 1 death.[8]

Authorities generally agree that the prognosis is apparently related to the time delay from the onset of the syndrome to the treatment. Colapinto reports 5 of 15 (33%) patients with complete recovery and 10 of 15 (67%) with residual deficit. He illustrated that a delay of treatment for one week or more resulted in permanent femoral nerve damage.[2]

Surgical evacuation of the hematoma is a less common form of treatment. Milleret recommends surgery before the onset of paralysis. His case recovered completely within 2 months.[5]

Colapinto's surgically treated cases showed mixed results. A 32 year old with a two day history of paralysis had only slight iliopsoas weakness 3½ years after surgery. A 29 year old with femoral neuropathy of the left for one week and neuropathy of the right that was more recent in onset, underwent bilateral surgical evacuation. The right femoral nerve showed complete recovery while the left nerve showed no recovery. Colapinto's final case had mild weakness of hip flexion six months postoperatively.[2] Wells and Templeton report two cases with good recovery.[8]

In summary, regardless of the treatment being medical or surgical, the earlier the diagnosis and the initiation of that treatment, the more likely recovery will be complete. Surgery might be a strong consideration if the onset of symptoms is very recent (within 24 hours, for example), the patient is a good surgical candidate, and adequate facilities are available. Unfortunately the diagnosis is often delayed, making the choice of treatment more controversial. The iliacus hematoma syndrome with femoral nerve

impairment is an important complication of anticoagulant therapy because the neuropathy can be reversed, and severe bleeding complications avoided with early recognition and treatment.

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Letters To The Editor

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President's Page

I am sure there are concerns among many of you about how the IPA-HMO will impact upon your practice. In order to help us, let's break down the initials.

IPA stands for Independent Practice Association. This means we will be able to practice in our setting and maintain our present patient-physician relationship. It should not change our hospitalization or referral patterns as it is now designed. A July issue of *Medical Economics* has an excellent article regarding the success of IPA's. I recommend its reading.

HMO stands for Health Maintenance Organization. It is merely an alternative method of prepaid medical insurance. Success of the HMO is based on lower utilization of health care providers without compromising quality of care.

We feel that the South Dakota Physicians Health Group, whose formation was authorized by the House of Delegates, will offer a health care policy extremely satisfactory to both patient and the participating physician. Due to the fact we are the organizers and Board of Directors we will have more control than if it was a for-profit system run by a management firm.

For the present, it is designed to be a fee-for-service payment rather than a gatekeeper plan. It is felt that the former is in keeping with the present practice patterns in South Dakota. Reimbursement will be made using a Relative Value Scale as many have used in the past, only with current reasonable unit values.

As stated previously the success of our organization depends on the utilization. It will be necessary to have pre-hospitalization certification, peer review, quality assurance and so on. All aspects of the delivery system will have to be monitored carefully. We cannot affort to have a "fox watching the henhouse" type of operation.

The South Dakota Physicians Health Group will succeed if we can carefully design a plan that can be successfully marketed and then implemented into our present health care system. In order to do this we must have excellent physician enrollment and participation. Remember it costs nothing to become a participant and it maintains the present physician patient relationship in your setting.

If there are questions or concerns, Bob Johnson or Paul Jensen or any member of the SDPHG Board of Directors are available to answer them. We will try to keep everyone as informed as possible as the plan progresses.

R. G. Gere, M.D.

R. G. Gere, M.D., President
South Dakota State Medical Association

South Dakota Foundation for Medical Care

DEFINITION OF PRINCIPAL DIAGNOSIS

SDFMC wants you to be aware of the definition of principal diagnosis and would appreciate it if you would clearly indicate a single principal diagnosis on the attestation so that this information can be included on the Medicare claim.

The principal diagnosis is the reason for the admission to the hospital, which is determined after relevant studies are completed and a diagnosis can be established. Other diagnoses can be billed as secondary provided they too affect the hospitalization. For billing purposes, Medicare requires that diagnoses which reflect the past history of the patient not be included on the claim form unless they affect the current hospitalization. The attending physician is required to indicate these diagnoses; however, in some situations he may contact hospital personnel regarding Medicare guidelines prior to making his decision. Since the physician is responsible for the care provided, it is imperative that the attending physician indicate on the attestation a specific diagnosis as principal. A listing of a variety of diagnoses with no apparent preference as to principal does not reflect the physician's opinion as to the care of the case and may be subject to misinterpretation.

Obstetrical Risk Assessment: A Retrospective Study

Loren H. Amundson, M.D.*

ABSTRACT

A Family Practice Residency utilizes two parent community hospital OB clinics for part of the training in obstetrics. A risk assessment study utilizing the Edwards Protocol was done retrospectively on 251 delivered patients. One hundred and ten of these patients were identified as high risk and they comprised 60% of the patients (mothers and infants) who had an outcome other than a normal uncomplicated vaginal delivery and newborn. Assessment instruments, one of which can be easily applied retrospectively, need further study in identifying risks during prospective surveillance of the pregnant woman during prenatal and intrapartum periods.

Several obstetrical risk assessment protocols have been described and studied in recent years.[1-8] A retrospective risk assessment study was undertaken to define the experiences and outcomes of care in two parent community hospital OB clinics where family practice residents provide prenatal, delivery, and postpartum care, utilizing family practice and OB faculty for teaching and consultation.

METHODS

Both OB clinics utilize the set of nonscored Hollister prenatal, labor and delivery, and neonatal forms. The Edwards Protocol,[3, 4] a simplified one page risk scoring system, was utilized to study and score the records of 251 delivered patients at entry into the OB clinic, at thirty-six weeks gestation, and upon admission to labor and delivery. A diagnosis/outcome instrument for review of parturient, and infant, was used to assess outcome from hospital records. The antenatal risk scores were recorded by labor and delivery personnel while the diagnosis/outcome codes were handled by records personnel, both under the supervision of and complete review by the author.

Edwards Protocol risk scores of seven and greater placed the patient at high risk (Table I). The outcome was considered either "normal" or "other" (morbidity) utilizing the following criteria:

1. Previous hospital admission(s) this pregnancy.
2. Postpartum problems during delivery admission.
3. Apgar scores of 4 and 7 or less.
4. Infant birth weight less than 5 pounds (2280 gm).
5. Maternal and neonatal length of stay.
6. Caesarean section, whether initial or repeat, while considered an important method of delivery, was not considered to be a normal outcome for the pregnancy.

These 251 deliveries represented nearly 10% of the 2600 deliveries occurring in these two community hospitals during the time of this study.

RESULTS

Patients were referred to the OB clinics by a community health center (78), a family practice residency (48), and by private practicing family physicians and obstetricians (125). There was no statistical difference between source of referral and resultant morbidity ($x^2 = .89$, $p = .64$).

Thirty-eight patients entered an OB clinic during the first trimester, 138 during the mid-trimester, and 75 during the last trimester. Outcomes by trimester of entry were similar ($x^2 = 1.11$, $p = .57$). Likewise, outcomes by time of high risk assessment; 40 on entry into an OBC, 28 at 36 weeks gestation, and 42 at time of onset of labor showed no statistical

*Professor of Family Medicine, USD School of Medicine, Sioux Falls, SD.

Table I

EDWARDS PROTOCOL*

DEMOGRAPHIC		more than 10% underweight	2
Maternal Age 15 or under 35 or over	2	poor nutrition	3
Parity Nulliparous	1	inadequate weight gain 12/less	5
Grand Multipara	2	excessive weight gain 48/more	3
Race Non-white	1	Smoking more than 1 pack per day	1
Marital Unmarried	1	Drug or alcohol abuse history	1
Dependent upon public assistance	1	this pregnancy	2
Prenatal care after 27 weeks less than 5 visits	2	MEDICAL	
OBSTETRIC		Anemia: 8-10 gm. Hgb	1
Infertility less than 2 years	1	under 8 gm. Hgb	2
more than 2 years	2	Sickle cell trait	2
Previous abortion: one	1	disease	7
two/more	2	Hypertension: mild	2
Premature/low birth-weight infant: one	1	severe	7
two/more	5	Heart disease: class I or II	2
this pregnancy	7	class III or IV	5
Previous excessive size infant: one	1	heart failure: history of	7
two/more	2	this pregnancy	7
Previous perinatal loss: one	5	Diabetes: gestational	3
two/more	7	overt	7
Post term, beyond 42 weeks: this pregnancy	7	Thyroid disease: history of	1
Previous C-Section	5	this pregnancy	7
Previous congenital anomaly	1	Venereal disease (gonorrhea or syphilis)	
Incompetent cervix	7	history of	1
Uterine anomaly	5	this pregnancy	5
Contracted pelvis	2	Cervical neoplasia	3
Abnormal presentation: history of	1	Urinary tract infection: afebrile: history of	1
this pregnancy	7	this pregnancy	3
Rh negative, sensitized	7	febrile: history of	2
Polyhydramnios	7	this pregnancy	5
Preeclampsia: mild, history of	1	Psychiatric and/or neurologic problem	
this pregnancy	3	history of--this pregnancy	1
severe, history of	2	Other medical condition: history of	1
this pregnancy	7	(i.e. pulmonary disease, severe influenza)	
Multiple pregnancy: history	1	this pregnancy	5
this pregnancy	7	RISK SCORES	
MISCELLANEOUS		At first visit	--
Nurtrition: more than 20% overweight	1	At 36 weeks	--
massive obesity	5	On admission to Labor and Delivery	--

differences ($x^2 = 1.28$, $p = .53$).

However, morbidity was significantly higher in those 138 patients $\leq$ 21 years of age at entry into an OBC ($x^2 = 15.67$, $p = .0004$) compared with those over 21 years of age at entry.

Figure 1 shows the maternal, neonatal, and shared morbidity findings in this study. Twenty-eight Caesarean sections (11%) were done on these patients, 24 being done in high risk patients. Cephalopelvic disproportion (CPD) was the most frequent indication for Caesarean section,[10] 80% of these being done on high risk patients. Four repeat Caesarean sections were done. Fetal indications led to eight of the Caesarean sections, including three breech presentations. Seventy-five percent of these Caesarean sections done for fetal indication were done on high risk patients.

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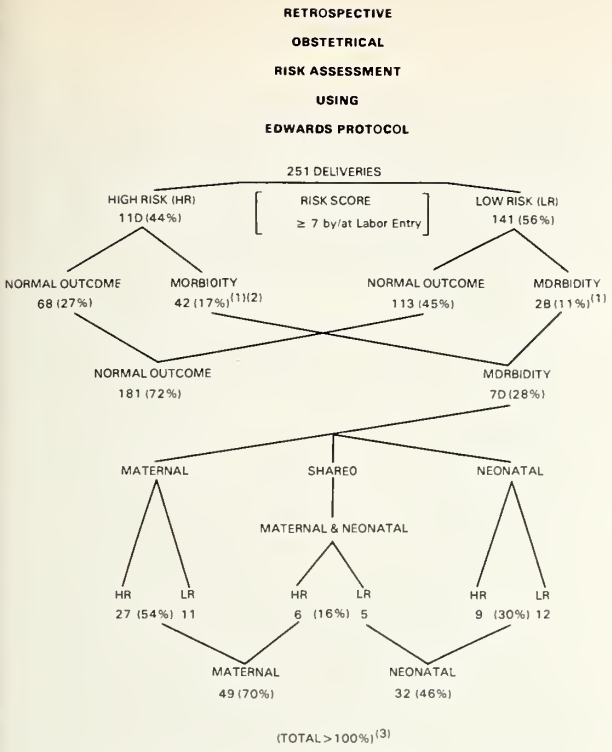

Figure 1

Respiratory Distress Syndrome (RDS) was the most frequent cause for neonatal morbidity, occurring in 9 of 32 cases, six of these cases being from the low risk group. Newborns with Apgar scores of 4 and 7 or less were seen in four cases (12%), three of these being in the high risk group, including the one neonatal death. One neonate from the low risk group presented with neonatal seizures and hypoglycemia, leading to a diagnosis of nesidioblastosis (hyperplasia of the cells of the islets of Langerhans) with resultant pancreatectomy.

DISCUSSION

Theoretical benefits of obstetrical risk assessment systems include a more uniform approach to deciding which patients might benefit from consultation and/or referral, educational value as a teaching tool for students and residents which may have a salutary impact on their future professional practices, and improved outcomes of pregnancy by reducing overall perinatal morbidity and mortality.[4]

Some risk assessment studies use entry into an Intensive Care Nursery (ICN) as a marker for neonatal morbidity.[3] This study delineated maternal, neonatal, and shared morbidity.

Use of the Edwards Protocol risk assessment instrument allowed easy retrieval of the data from unscored Hollister forms used by two hospital OB clinics and labor units.

It is concluded that further studies of obstetrical risk assessment by prospective use of antepartum risk scoring indices are indicated and may provide a better definition of "high risk" pregnancy, thereby more clearly delineating parameters for screening, care and prognosis.

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The organizational goals of the National Auxiliary for the coming year include: promoting cost-effective benefits of preventive health care; broadening knowledge and participation in health related legislation; raising funds for quality medical education and research; and stressing benefits of belonging to the Auxiliary.

Our State goals, include supporting community services for older Americans to help improve their quality of life and to advocate the positive aspects of aging. Judy Thompson, health projects chairman will be in charge of this important area, and of stimulating interest in the development of other health projects filling our community needs.

Under the leadership of membership chairman Ellen Kunz, the top priority is to interest and involve more people. Concern for our medical student spouses prompted us to sponsor National Auxiliary membership for the University of South Dakota sophomore class spouses this coming year. This sponsorship is an excellent way to generate the positive interest of our future members in Auxiliary activities.

Our legislative chairman, Peggy Huber is in the process of making arrangements for our annual "Legislative Day" in Pierre. This will be held in conjunction with the winter SoDaPac meeting and the Auxiliary Board meeting. We encourage you to invite your legislators to an informal evening of cocktails and dinner as your guests. Legislation should be an area of increasing auxiliary involvement as the government continues to affect so many aspects of health care.

The increasing cost of medical education has been coupled with decreased availability of funds for loans. Illa Thompson will be leading the AMA-ERF efforts with the help of Mary Wrage. Our fund raising efforts have gone towards emergency student loans, teaching equipment, USD Alumni Newsletter, Medical Student Spouses organization and more.

Any questions concerning these areas of Auxiliary involvement should be directed towards these chairmen or me.

Shirley Ryan

Shirley Ryan, President
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Over 120 registrants from 19 states, including South Dakota family practice residents, attended the 16th Annual BHSS held at the Howard Johnson Motor Lodge in Rapid City, August 8-10, 1985. They heard timely topics on diabetes mellitus, cardiovascular diseases and practice management presented by a faculty consisting of J. Michael McMillin, M.D., Fred C. Lovrien, M.D., Stephen N. Haas, M.D., Leonard Mastbaum, M.D., Bruce Zimmerman, M.D., Lewis C. Ofstein, M.D., Mary T. Slattery, M.D., C. Pat O'Brien, M.D., Paul C. Carpenter, M.D., James Jackson, M.D. and Andrew P. Moreley, M.D.

Robert W. Higgins, M.D., President, AAFP, and his wife Barbara.

Nicholas J. Pisacano, M.D., Executive Director, ABFP, and his wife Virginia Leigh.

Robert W. Higgins, M.D., President of the American Academy of Family Physicians, and his wife Barbara of Bremerton, WA and American Board of Family Practice Executive Director, Nicholas J. Pisacano, M.D. and his wife Virginia Leigh of Lexington, KY were guests of SDAFP for this meeting. Both Dr. Higgins and Dr. Pisacano spoke at the Thursday noon luncheon. Other chapter guests included: NDAFP President, Roman Patel, M.D. and his wife of Tioga, ND; NAFP President-Elect, Richard Blatny, M.D. and his wife of Fairbury, NE; and MAFP President-Elect, Donald Asp, M.D. and his wife of St. Paul, MN.

Pictured are Dr. and Mrs. Higgins and Dr. and Mrs. Piscano.

Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

WARNING

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: **Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired.** If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

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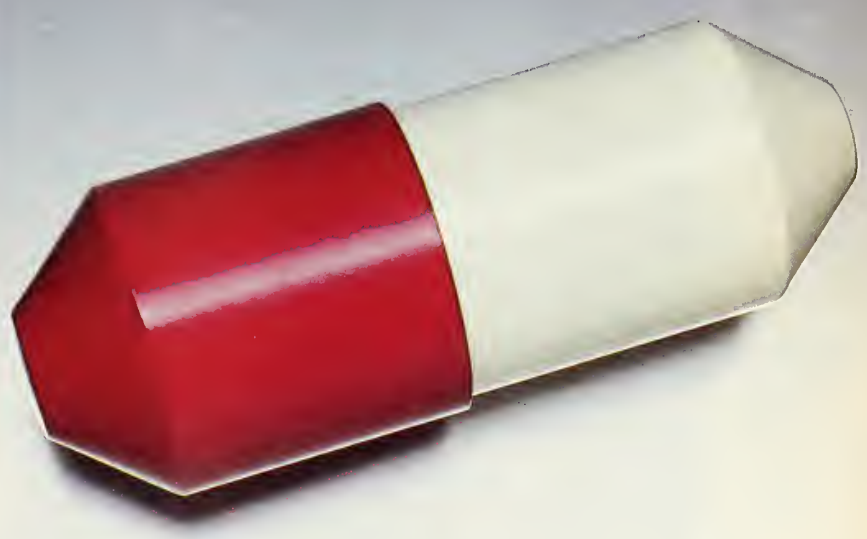

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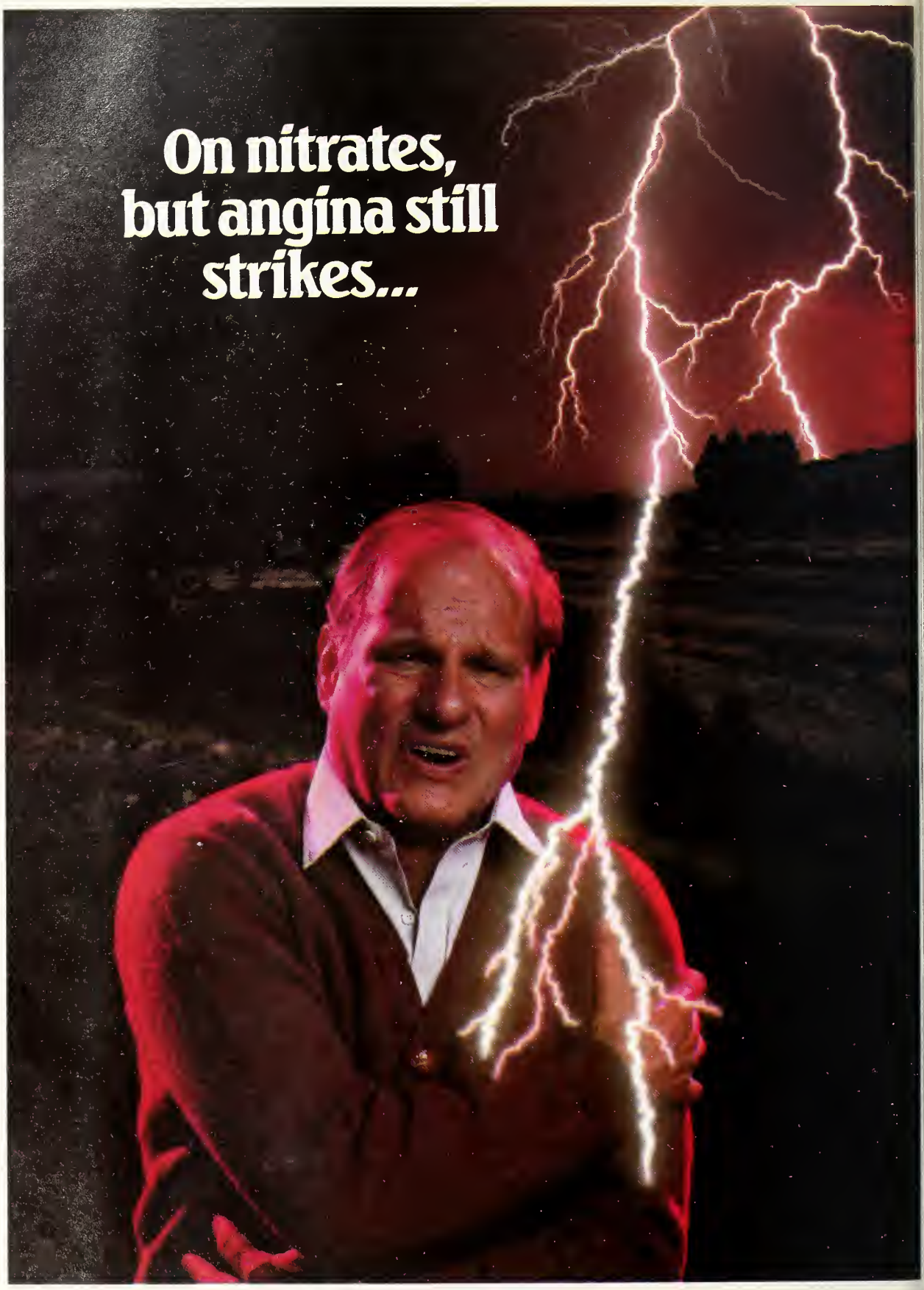
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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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Analgesic Associated Nephropathy (AAN): Case Report and Review of the Literature*

James R. Horning, M.D.**

ABSTRACT

In Europe, 20% of cases of end stage renal disease (ESRD) are thought to result from analgesic associated nephropathy (AAN). The incidence in this country has been assumed to be lower (7%). Recent reports question this, and suggest AAN is fully as common in the United States as in Europe.

Some authorities suggest AAN is underrecognized, patients being labelled as having "chronic pyelonephritis." It may be underdiagnosed because of a low index of suspicion, poor history taking, or patient denial.

The case demonstrates the problem. A middle-aged woman was admitted with the diagnosis of pyelonephritis (with positive blood cultures); two subsequent admissions followed before the underlying diagnosis was made. She demonstrates many of the classic features of AAN. Diagnosis is crucial, because renal failure will result if analgesic abuse continues.

1st ADMISSION:

A 48 year old Caucasian woman was admitted with complaints of severe low back pain, generalized malaise, and dysuria. She had had a prior laminectomy, and subsequent admissions for back pain. Past medical history was unremarkable except for a T&A, and "always being anemic."

Physical Exam: Pulse 100, Blood pressure 110/70, temperature 99° F, respirations 16; right and left costovertebral angle tenderness, flank and right upper quadrant pain, grade II/VI systolic murmur at the lower left sternal border without radiation, decreased bowel sounds, equivocal straight-leg-raising test on the right.

Laboratory Data: Hemoglobin 9.3 gm/dL, hematocrit 32 ml/dL percent, WBC 21, 600/cu mm with 86% segmented neutrophils, 8% neutrophilic bands; urinalysis: 10-20 red blood cells per high power field, albumin 300 mg/dL (<150 mg/day); serum albumin 3.7 g/dL (3.8-5.8), serum iron (Fe) 2 mcg/dL (42-135).

X-Rays: Normal chest. Abdominal film showed an air-fluid level in the colon and questionable extrinsic pressure at the hepatic flexure; intravenous pyelogram showed non-visualization of the right psoas muscle margin, blunting of the right calyces, smaller right kidney, and less dye uptake on the right. Ultrasound suggested questionable right perinephric abscess; there was no hydroureter or hydronephrosis.

Course: She spiked a temperature to 103.6°F; blood cultures were drawn, and ampicillin and gentamicin were started. The next day the urinalysis showed granular casts, some RBCs, and WBCs too numerous to count; the urine colony count was 3,000 gram negative rods/mm. Serum creatinine was 1.2 mg/dL (0.5-1.1) and the uncorrected reticulocyte count was 1.7%. All three blood cultures were posi-

*Presented in part at the annual meeting of the South Dakota Chapter of the American College of Physicians, September, 1982.

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tive for Escherichia coli. The highest levels of creatinine and urea nitrogen were 2.2 and 18 mg/dL, respectively. Gentamicin peak and trough levels were 5 and 2 mg/ml respectively. After the 4th day she was afebrile, but received nine days of parenteral antibiotics, and was discharged with a 2-week course of an oral cephalosporin. She also received meperidine, ASA, and Tylenol#3® while in the hospital.

Follow-up UA occasionally showed WBCs, but basically she had no pyuria, cultures were negative, and her creatinine and BUN stabilized.

2nd ADMISSION:

Ten months later she was admitted with nausea, vomiting, dysuria, and back pain. In the interval, she had had two urinary tract infections, treated with oral antibiotics.

On examination, pulse was 96, BP 158/82, temperature 99°F, respirations 16; the murmur was unchanged, scaphoid abdomen without tenderness, right CVA tenderness.

Laboratory Data: Hb 10.3 g/dL, Hct 30 ml/dL. WBCs 23,300/cu mm with 88% segs, 3% bands; UA: 25-30 RBC/hpf, 12-15 WBC/hpf, Alb 30 mg/dL, no casts, no growth on cultures; erythrocyte sedimentation rate (Westergren) 85 mm/hr (0-20), Cr 2.8 mg/dL, BUN 26 mg/dL (7-18).

X-rays: IVP revealed decreased uptake compared to previous study, and blunting of the calyces bilaterally. Ultrasound showed normal kidneys; poorly visualized gallbladder.

Course: She was started on cephapirin and gentamicin at decreased dosage because of the elevated Cr and BUN. Her highest Cr was 3.2 mg/dL; normal thyroid profile, negative hepatitis screen, low ferritin, negative FANA, and normal complement levels. She was afebrile the rest of her stay and was discharged with oral ampicillin by another physician. She was subsequently placed on suppressive antibiotic (Bactrim)® therapy for presumed recurrences of her urinary tract infections.

3rd ADMISSION:

Five months later she was admitted after having an episode of "flu," with persistent nausea and vomiting. Renal function showed further deterioration with a Cr of 4.4 mg/dL, and a BUN of 49 mg/dL. After review and detailed questioning of her family, it was discovered that she had had 98 prescriptions filled, primarily APC and codeine; some ASA and codeine. This occurred over about 6 years. She admitted taking about 6-8 such tablets/day. Physical examination showed no significant change.

Laboratory Data: Hb 11.6 g/dL, Hct 32 mg/dL, WBC 10,400/cu mm, 84% segs, 1% bands; Cr 4.6 mg/dL, BUN 55 mg/dL, ESR 74 mm/hr, serum bicarbonate (HCO3) 13 mmol/L (22-29), Anion gap 18 (7-14), suggesting hyperchloremic metabolic acidosis.

She was admitted to Hennepin County Medical Center for detailed renal work-up. Impression was: analgesic associated nephropathy (AAN), since it was estimated that she had consumed about 2.5 kg of phenacetin. Voiding cystourethrogram revealed no reflux. Retrograde pyelography showed no abnormalities other than mild clubbing of the left lower calix and an irregular margin of the right upper calix. Serum protein electropheresis and immunoelectropheresis were normal. Creatinine clearance was 12 ml/min.

Discharge recommendations included: no phenacetin, no acetaminophen, and no aspirin. Plain codeine was permitted for pain. She was given a potassium supplement, since she was hypokalemic while at Hennepin County. At follow-up, Hb was 11.1 gm/dL, Hct 32 ml/dL, K 4.2 meq/L (3.5-5.1), Cr 2.6 mg/dL, BUN 33 mg/dL.

DISCUSSION[1, 2]

There are two reasons for presenting this patient: 1) she presents many classic features of analgesic associated nephropathy; 2) to highlight the recent interest in this entity in the United States.

1. Classic Features:

The patient was a woman, over 30 years of age. She had pain (headache, arthritis), psychological complaints, gastrointestinal complaints, etc. There was sterile pyuria, a previous diagnosis of "chronic pyelonephritis," renal insufficiency, anemia out of proportion to the renal disease, elevated erythrocyte sedimentation rate, hematuria, and urinary tract infections. She felt worse with dehydration secondary to the "flu" episode, possibly aggravated from concurrent laxative use. There was a hyperchloremic (increased anion gap) metabolic acidosis. X-ray findings were consistent with the diagnosis. There was a history of probable renal colic, raising suspicion of slough of a papilla at the first admission, and of course, the history of analgesic abuse.

Other features that have been associated with AAN include myocardial infarction, sodium abnormalities, psychiatric disturbances, abnormal EEGs, decreased urinary concentrating ability, and decreased ability of the kidney to acidify the urine (renal tubular acidosis).[3-9]

2. Incidence in the U.S.:[3, 10-13]

It had been believed that AAN was relatively uncommon in the U.S., especially in comparison to Europe and Australia where 20% of all "interstitial

nephritis'' is caused by analgesics.[1, 6] Although these compounds were introduced in the late 1800s, it was not until the early 1950s that they were recognized as a cause of interstitial nephritis. The initial work was done by Zollinger and Spuhler, and by Gloor in Switzerland.[6, 12] Not until 1965 did a paper appear in the U.S. literature, suggesting there was a problem with analgesics and the kidney; the first real study was done in 1975.[4, 5]

The World Health Organization studied over 600 women prospectively, and demonstrated a significant development of nephropathy, which was primarily attributed to phenacetin.[14] Which drug remains controversial; it appears that mixtures may be important.[12, 15] Within one hour 90% of phenacetin is metabolized to acetaminophen (paracetamol).[5] ''Abuse'' may not be an absolute term, since 6 tablets per day of the right mixture for three years may cause damage. There is also a familial tendency to suspectibility.

Single drugs appear safe.[9, 15, 16] A study involving rheumatoid arthritis patients taking aspirin alone for more than 10 years found no renal problems.[17] However, there are numerous reports concerning most of the non-steroidal anti-inflammatory agents and apparent renal damage. This may be especially important in light of the relatively short time since these drugs were introduced, in comparison to aspirin, phenacetin, and acetaminophen.[18, 19]

Which analgesic to use? Some recommend propoxyphene, acetaminophen, plain aspirin, plain codeine, and pentazocaine. Pain clinics, psychological help, and stoicism are the most benign, but their efficacy remains to be shown.

Renal function usually stabilizes, or actually improves, if analgesics are stopped in the patient with AAN. Almost every patient who continues to abuse the analgesic progresses to endstage renal failure.[3, 6, 10] There are certain poor prognostic signs: hypertension, proteinuria, coronary artery disease, infections, and continued use of analgesics.

A complication of AAN appears to be transitional cell carcinoma of the renal pelvis. There is an 8-fold increase in probability for its development in patients with AAN; persistent hematuria seems to be a risk factor. Ten percent of the patients with AAN in one study developed transitional cell carcinoma.[20, 21]

Many investigators believe AAN is underrecognized and underdiagnosed. It is underrecognized due to the ''chronic pyelonephritis'' label. It is underdiagnosed because of inadequate history-taking, lack of awareness on the part of physicians, and because of patient denial. Some feel there is no reason to believe this entity is any less common in the U.S. than in Europe or Australia.[3, 5, 8] Canada had reduced the incidence of AAN by 50% or 40% per year since the sale of analgesic mixtures was banned in that country. Analgesic use has not decreased, but the use of mixtures has stopped.[7, 22]

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Indications: Symptomatic relief of signs and symptoms of idiopathic decline in mental capacity (i.e., cognitive and interpersonal skills, mood, self-care, apparent motivation) in patients over sixty. It appears that individuals who respond to HYDERGINE therapy are those who would be considered clinically to suffer from some ill-defined process related to aging or to have some underlying dementing condition, such as primary progressive dementia, Alzheimer's dementia, senile onset, or multi-infarct dementia. Before prescribing HYDERGINE® (ergoloid mesylates), the physician should exclude the possibility that signs and symptoms arise from a potentially reversible and treatable condition, particularly delirium and dementiform illness secondary to systemic disease, primary neurological disease, or primary disturbance of mood. Not indicated for acute or chronic psychosis regardless of etiology (see Contraindications).

Use of HYDERGINE therapy should be continually reviewed, since presenting clinical picture may evolve to allow specific diagnosis and specific alternative treatment, and to determine whether any initial benefit persists. Modest but statistically significant changes observed at the end of twelve weeks of therapy include: mental alertness, confusion, recent memory, orientation, emotional lability, self-care, depression, anxiety/fears, cooperation, sociability, appetite, dizziness, fatigue, bothersome(ness), and overall impression of clinical status.

Contraindications: Hypersensitivity to the drug; psychosis, acute or chronic, regardless of etiology.

Precautions: *Because the target symptoms are of unknown etiology, careful diagnosis should be attempted before prescribing HYDERGINE (ergoloid mesylates) preparations.*

Adverse Reactions: Serious side effects have not been found. Some transient nausea and gastric disturbances have been reported, and sublingual irritation with the sublingual tablets.

Dosage and Administration: 1 mg three times daily. Alleviation of symptoms is usually gradual and results may not be observed for 3-4 weeks.

How Supplied: HYDERGINE LC (liquid capsules); 1 mg, oblong, off-white, branded "HYDERGINE LC 1 mg" on one side, "S" other side. Packages of 100 and 500. (Encapsulated by R. P. Scherer, N.A., Clearwater, Florida 33518).

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Professional Liability Briefs

"Which Patients Are Most Likely to Sue?" was the title of an article by John H. Lavin in *Medical Economics*. Mr. Lavin outlined a program conducted by St. Paul Fire and Marine Insurance Co. to help its policy holders spot risky cases before suits are actually filed.

Initially you need to review your medical records to see if any of the selected criteria fit any patient. The more criteria that apply, the greater the chance of a lawsuit. The initial screening need not be done by a doctor, but whenever a criterion is identified, physicians should make an in-depth review of that medical record.

Here are the nine criteria St. Paul goes by:

1. Patient returns within three months of the initial visit for management of a condition that might suggest adverse effects of prior management.
2. Patient suffers cardiac or respiratory arrest. If the patient survives, the record should be analyzed to determine whether the patient can attribute any present or future injury to the arrest, can assert that the arrest was possibly iatrogenic or preventible, or can claim that the injury sustained would have been mitigated by more timely and appropriate response.
3. Death. All death cases should be anaylzed for potential liability, excluding exceptional circumstances such as patients receiving planned terminal care.
4. Laceration, perforation, tear, or puncture of an organ or a body part occurs during an invasive procedure and requires surgical intervention for repair.
5. Unanticipated transfer of a patient to an acute-care facility (or of a hospitalized patient to intensive care).
6. The patient's medical record doesn't show that proper instructions have been given to the patient or to competent members of the family.
7. The patient's family complains. This identifies people who may be prone to sue for an actual or perceived physical injury or emotional trauma.
8. Incomplete or non-existent evidence of informed consent to do certain diagnostic and therapeutic procedures.
9. Medical record is incomplete. The entry for each patient visit should contain at a minimum: date and time, department (if departmentalized), provider name and designation, chief complaint, purpose of visit, diagnosis or medical impression, studies ordered, therapies administered, disposition, recommendations, instructions to the patient, and signature of practitioner.

Richard N. Smith, D.O. has recently opened his orthopedics and orthopedic surgery practice in Huron. Dr. Smith received his DO degree from Kirksville College in 1965. He served his internship and residencies at Lansing General Hospital, Lansing, Mich. He practiced in both Michigan and Montana before coming to South Dakota. Dr. Smith, a native of Ohio, is certified in orthopedic surgery.

Dr. Smith and his wife have 3 children, two daughters in college and a son at home.

* * * *

Drs. Fred Lovrien, Thomas Shultz and **Si Lee,** all of Sioux Falls, are on the Advisory Board of the Juvenile Diabetes Foundation for 1985-86.

* * * *

Scott Berry, M.D., specialist in obstetrics and gynecology, has opened his medical practice in Aberdeen. Dr. Berry, born in California and raised in Mitchell, received his medical degree from USD School of Medicine in 1981. He served his internship and OB/GYN residency at the Indiana Univ. of Medical Center in Indianapolis, Ind.

He and his wife, Pam, have two children.

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After 39 years of service to the Huron community, **Dr. Theodore Hohm** has retired from the active practice of medicine. An open house was held in his honor at the YWCA in Huron.

* * * *

Joining the Tschetter-Hohm Clinic in Huron, in internal medicine and nephrology, is **Steven E. Neu, M.D.,** a native of South Dakota. He is a graduate of Creighton Univ., Omaha, in 1979. He served his internship at the V.A. Hospital in Palo Alto, CA and completed his residency in internal medicine at the Univ. of Minnesota Hospitals in Minneapolis. He has recently completed a two year Nephrology Fellowship at Hennepin County Medical Center in Minneapolis before returning to South Dakota.

* * * *

Dr. Marck C. Werpy has joined the staff of Medical Associates Clinic in Pierre, in family practice and obstetrics. He graduated from the Univ. of Minnesota School of Medicine in 1975. He completed his residency at the Univ. of Minnesota. Prior to coming to Pierre, he was in private practice in Morris, Minn.

Dr. Werpy and his wife Bonnie have 3 children.

* * * *

The Board of Directors of Tri-County Health Care has announced that **Dr. Susan Austin** has joined the staff as a family practice physician. Dr. Austin, a native of New York, completed her medical degree in 1982 at Tufts Medical School in Boston, Mass. and just recently completed her residency at the Main-Dartmouth Family Practice Program in Augusta, Maine prior to coming to Wessington Springs.

In her spare time, Dr. Austin enjoys music and plays piano and guitar.

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Future Meetings

November

National Conference on Health Policy and Quality of Care for Older Americans, Radisson Mark Plaza Hotel, Alexandria, VA, Nov. 12-13. Fee: $175. For more information: call toll free, 1-800-621-8335.

Clinical Strategies in Primary Care Medicine, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Nov. 14-16. 18 hrs. AMA Category I credits. Contact Charles Drage, M.D., Dir. CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

1st Annual Clinical Update for Physicians, Holiday City Centre, Sioux Falls, SD, Nov. 15-16. Fee: $25. AAFP & AMA Category I credits available. Contact: Jo Erickson, Dept. of Med. Ed., McKennan Hosp., 800 E. 21st St., Sioux Falls, SD 57101. Phone: (605)339-8087.

The Treatment of Eating Disorders: What's Working and Why, Omni Park Central Hotel, New York City, NY, Nov. 16-17. Contact: Gretchen Walter, Conf. Coord., CSAB, 1 W. 91st St., New York, NY 10024. Phone: (212)595-3449.

Detection & Diagnosis of Substance Abuse in Patients, St. Paul-Ramsey Med. Ctr., St. Paul, MN Nov. 21-22. 14 hrs. AMA Category I credits. Contact: Charles Drage, M.D., Dir., CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

December

Coronary Heart Disease: A Comprehensive Review of Principles & Practice & Workshop on Bedside Hemodynamic Monitoring and Pacing, St. Paul-Ramsey Med. Ctr., Dec. 4-7. 18-25 hrs. AMA Category I credits. Contact: Charles Drage, M.D., Dir., CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

Advanced Trauma Life Support Provider Course, McKennen Hosp., Sioux Falls, SD, Dec. 13-14. AAFP & AMA Category I credits available. Contact: Jo Erickson, Dept. of Med. Ed., McKennan Hosp. 800 E. 21st St., Sioux Falls, SD 57101. Phone: (605)339-8087.

January

Interventional, MRI and Neuroradiology, Fairmont Hotel, San Francisco, CA, Jan. 13-17, 1986. Contact: Dept. of Radiology, Univ. of Calif. San Francisco, San Francisco, CA 94143.

Diagnostic Radiology Seminars, Camino Real, Ixtapa, Mexico, Jan. 20-24, 1986. Contact: Dept. of Radiology, Univ. of Calif. San Francisco, San Francisco, CA 94143.

9th Annual San Diego Postgraduate Assembly in Surgery, Hotel Inter-Continental-San Diego, San Diego, CA, Jan. 20-24, 1986. 32 hrs. AMA Category I credits. Contact: Off. of CME, M-017, U.C. San Diego School of Med., LaJolla, CA 92093. Phone: (619)452-3940.

Ob/Gyn Conference, Courchevel, France, Jan. 14-Feb. 1, 1986. Contact: Beth Isreal Hosp. Conf. & Institute Prog., P.O. Box 11338, Denver, CO 80211-0338. Phone: (800)525-5810.

Surgery for the Aging Face: Focusing on the Issues, Hotel Inter-Continental on the Embarcadero, San Diego, CA, Jan. 30-Feb. 2, 1986. Fee: $295. For more information call: Un-Conventional Inc. (619)692-9115.

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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Ethical and Legal Aspects of Medical Care in Permanent Coma

Jerome W. Freeman, M.D., FACP*

ABSTRACT

This essay examines divergent ethical viewpoints on how much medical care should be given to patients in permanent coma. It also discusses a number of key court cases which have addressed these ethical issues.

As the practice of medicine and society as a whole change and evolve, so do the ethical dilemmas which must be confronted and resolved. A good example in this regard is the concept of brain death. For all of recorded history, death has always meant cessation of respiration and heart rate. Death meant the same thing to Hippocrates as it did to Osler. However, in the space of a mere twenty-five years the indisputable fact of what constitutes death has abruptly evolved to include the notion of brain death. This development has been the direct result of our technologic advances — i.e. cardiopulmonary resuscitation, the widespread use of ventilators and capability of organ transplantation. Thus our scientific advances have demanded and achieved substantive changes in society's beliefs and values.

Such refinement in our values and ethical beliefs must necessarily accompany our scientific progress. That is, our ethical wisdom and sophistication must constantly struggle to keep pace with the questions and dilemmas posed by our new technologies.

A salient example of this evolution is evident in a struggle which medicine and society currently share. At issue are questions concerning how much care should be rendered to patients in permanently unconscious states. These conditions can include coma and the so-called vegetative state. In the latter, there may be definite sleep/wake cycles and some organized body movement, but no apparent cognition or conscious ability to respond to one's body or to the surrounding environment. In this essay the terms, coma and vegetative state, will both be used to reflect permanent unconsciousness.

As an aspect of medicine's technologic advances which offer both the fact and the promise of new ways to combat disease, medicine has also become much more adept at prolonging dying and at maintaining a biologic survival long after personhood has been irreversibly lost. In this regard our technologies are a double edged sword whose implications must be critically analyzed and questioned. Testimony to this fact can be seen in the reports of brain dead individuals kept physiologically functioning for long periods of time.[1, 2] Clearly, medicine has the technical capabilities to frequently achieve this. The critical question is whether this is an ethically appropriate goal for medicine. For the most part physicians and society concur that it is not. However there is considerably less concurrence at present as to how the patient in a permanently vegetative state should be handled. At issue is the question of whether our morality should dictate that all such forms of human existence be sustained (and if so, how vigorously). Patients in a permanently vegetative state are not a rarity. There are estimated to be 5,000-10,000 such patients in the United States at present.[3]

Death meant the same thing to Hippocrates as it did to Osler.

Holmes Rolston[4] is illustrative of the position that biologic life should be sustained. He asserts that although a person in irreversible coma has no personal life, society has a moral duty to that individual's remaining biologic life. He describes the

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goal of medicine in such instances as striving to "keep the patient hydrated and nourished, protected from injury and infection." That is, he proposes an obligation to nuture physiologic functioning with "ordinary" (as opposed to excessively aggressive extraordinary) medical therapy. With such proposals, Rolston endorses the type of treatment that was given to Karen Ann Quinlan and continues to be rendered to the thousands of similarly situated patients in vegetative states. Such a position supports the distinction which clinical medicine currently makes between brain death and irreversible coma.

At issue are questions concerning how much care should be rendered to patients in permanently unconscious states.

Many other thinkers ardently and eloquently endorse a position similar to Rolston's. Meilaender[5] asserts that "for the permanently unconscious patient, feeding is neither useless nor excessively burdensome. It is ordinary care. . ." Siegler and Wesbard[6] note: "we have deep concerns about accepting the practice of withholding fluids from patients, because it may bear the seeds of unacceptable social consequences." They suggest that such policy would inevitably expand to include "the terminally ill, the permanently unconscious, the severely senile, the retarded, the incurably or chronically ill, and perhaps, the aged." The essence of such an argument is that if quality of life distinctions are made in one case (such as for persons in permanent coma), there will be no logical limitation or moral force to prevent extension of this distinction to other classes of humans.

On the other hand, there are many thinkers in this country who feel that the foregoing formulations are inadequate in their response to a complex issue and indeed are productive of inhumane action. Specifically, the argument is proffered that truly human existence connotes and requires more than mere physiologic functioning. Implicit in this notion is the belief that medicine and society do not have an obligation to continue to sustain mere physiologic functioning, once it has been established that there is no meaningful hope of further recovery. In other words, just as medicine and society have collaborated to define some types of mere physiologic functioning as death (i.e. the absence of brain and brainstem activity as brain death), now there should be a reappraisal of what survival without any cognitive activity (i.e. a vegetative state) means and requires.

In this regard, the argument is advanced that either the presence or potential for some cognitive activity is indispensable to the human condition. That is, human life is a conditional value, in that it requires certain elements which uniquely characterize and dignify the human being. Clearly, an attempt to specifically characterize these elements is a difficult and ellusive proposition. And indeed the belief that this should be attempted does not demand as a corollary the conviction that what constitutes a human person can be indisputably defined and universally accepted. Indeed, it may be more reasonable and pragmatic to concentrate on the converse of the issue — i.e. to make specific clinical judgements in certain clinical situations that the potential for human social and cognitive behavior has irreversibly ceased to exist.

When, in fact, this determination is made, continued medical and nutritive treatment arguably becomes superfluous. Such continued treatment can no longer benefit the patient as a human individual. Siegler and Weisbard note: "In these cases, it is very difficult to discern how any medical intervention can benefit or harm the patient. These patients cannot and never will be able to experience any of the events occurring in the world or in their bodies."[6] In these cases, ethical principles such as autonomy and beneficience, which value and protect truly human existence, cease to have relevance. Very simply the patient in a permanently vegetative state is beyond personal benefit from medical ministrations. Thus, it can be argued, these ministrations are not mandated.

This issue may also appropriately be viewed on a more concrete level. As Beauchamp and Childress note, one's moral judgements must be in accord with one's common sense and wisdom.[7] For most persons, the contemplation of themselves or their loved ones in a permanently vegetative state is abhorrent.

Specifically, the argument is proffered that truly human existence connotes and requires more than mere physiologic functioning.

Certainly this view is shared by many of the medical personnel who care for patients in this condition. To many, continued existence in irreversible coma is an affront to human dignity. It seems to violate the patient's natural right to nontreatment and death. In this regard, the "injury of continued existence" has been mentioned.[8]

In addition to these ramifications for the individual (which many authorities feel should take precedence), these questions hold major implications for society as a whole. A strong argument can be made that in the face of (1) the increasing medical capability to preserve biological existence after cognitive function is lost; (2) the scarcity of medical resources; and (3) the staggering cost to society of medical technology, society may be forced on utili-

tarian grounds to designate that permanently vegetative patients should receive no treatment or sustenance, and be allowed to rapidly die.

And in fact our society, through the vehicle of the courts, has begun to establish a record of legal precedence for such action. These decisions, developed over the past ten years, would seem to validate the immediately foregoing arguments that human dignity and individual rights are not served by prolonging or nurturing permanent coma. A brief review of these cases is illustrative.

For most persons, the contemplation of themselves or their loved ones in a permanently vegetative state is abhorrent.

The well known Karen Ann Quinlan case, decided by the New Jersey Supreme Court in 1976, permitted the patient's guardian to request that a life support system (a respirator) be withdrawn. This decision did require the input of a hospital ethics committee to confirm the medical prognosis of severe, irreversible brain injury. Despite the fact that the respirator was stopped, Quinlan continued in vegetative state for 10 years.

The Brother Fox case was handed down by the New York Court of Appeals in 1981. This dealt with an 83 year old male who developed permanent coma due to severe brain anoxia during surgery. In this case, the court affirmed the right of adults to refuse treatment, and indicated that treatment for the incompetent patient may be stopped if there is convincing evidence that the patient had provided instructions to terminate life sustaining procedures in the face of a vegetative state. Interestingly, Fox had expressed such views in a community discussion of the Quinlan case. This decision does not allow the patient's guardian to presume what the patient's wishes would have been, and thus could severely limit the widespread applicability of the decision. Also, this court did hold that authorization for removal of life support systems must come from the court.

In October 1983, the California Court of Appeals heard the case of Barber vs Superior Court.[9] The court unanimously dismissed murder indictments against two physicians who had discontinued intravenous (IV) fluids in a 55 year old comatose man with apparently irreversible brain injury. The court equated IV fluids with respirators, suggesting that both were forms of medical treatment which at times can be appropriately discontinued. In so doing, the court discussed treatment in terms of proportionate and disproportionate benefit. "Proportionate treatment is that which in the view of the patient, has at least a reasonable chance of providing benefit to the patient, which benefits outweigh the burdens attendant to the treatment." The court criticized the distinction that the prosecution had attempted to make between mechanical breathing devices (respirators) and mechanical feeding devices (IV lines). The court noted that "the distinction urged seems to be based more on the emotional symbolism of providing food and water to those incapable of providing for themselves rather than on any rational difference. . ." The court went on to assert that medical treatment is justified only if it yields a net benefit to patients. "Medical nutrition and hydration may not always provide net benefits to patients. . . . Their benefits and burdens ought to be evaluated in the same manner as any other medical procedure." The court also noted that the decision is an inherently medical one, made on the basis of facts unique to each case.

The case of Mary Hier was decided by the Appeals Court of Massachusetts in June 1984.[10] This case involved a 92 year old woman who was unable to swallow and was incompetent by virtue of severe, longstanding psychiatric illness. Repeated efforts were made to treat her with nasogastric tubes and gastrostomies. She repeatedly pulled out these devices, and had undergone multiple surgical procedures for implantation of gastrostomy tubes. Hier's guardian ad litem, noting that she was not brain dead, comatose or vegetative, urged continued surgical reimplantation of the gastrostomy tube. He argued that providing nutrition should be distinguished from other types of medical treatment. The court, using a substituted judgement analysis, determined that another surgery to implant a new gastrostomy was intrusive and burdensome. In making the decision the court noted that "Mrs. Hier has repeatedly and clearly indicated her opposition to procedures necessary to introduce tube feeding (both gastric and nasogastric); that the benefits to be realized from performing the gastrostomy are diminished by her repeated history of dislodgments; that such dislodgments can probably not be prevented except by the use of physical restraints; and that physicians who had seen Mrs. Hier and evaluated her condition were making thoughtful recommendations that surgery was inappropriate in her case."

These decisions, developed over the past ten years, would seem to validate the immediately foregoing arguments that human dignity and individual rights are not served by prolonging or nurturing permanent coma.

The case of Claire Conroy, decided by the New

Jersey Supreme Court in early 1985, also takes a liberal stance.[11] This patient was an 85 year old nursing home resident whose permanent vegetative condition arose from a profound, endstage dementia. The patient lay in a semi-fetal position and had no capability for social interaction. She had multiple, major medical problems as well. The court ruled that her feeding device (a naso-gastric tube) could be removed, even though she was not technically terminal or comatose. The ruling affirmed the right of a guardian to make a substituted judgement for the patient. It equated a feeding tube with a respirator, as both being means of prolonging life by artificial means. The court noted that cases such as this do not lead to easy answers or ideal solutions. The court also commented that "it cannot be assumed that it will always be beneficial for an incompetent patient to receive artificial feeding or harmful for him not to receive it."

The court also commented that "it cannot be assumed that it will always be beneficial for an incompetent patient to receive artificial feeding or harmful for him not to receive it."

In addition to such legal cases, two national reports have recently addressed the question of terminating artificial feedings. The Presidential Commission which generated the report entitled *"Deciding to Forego Life-Sustaining Treatment,"* noted that "patients' families should play a critical role in determining what types of medical care should be given to permanently unconscious patients. The report notes that "the law does not and should not require any particular therapies to be applied or continued, with the exception of basic nursing care that is needed to ensure dignified and respectful treatment of the patient."[12]

This study advocates that the physician attempt to ascertain from family and friends the attitudes and wishes the patient would have expressed if competence had been maintained.

Another collective effort, the result of a consortium of physicians from across the nation, lead to the article "The Physician's Responsibility Toward Hopelessly Ill Patients" which appeared in the New England Journal last year.[13] This report is explicit in its support of withdrawing life support measures from the patient in a permanently vegetative state (including the patient in an advanced state of progressive dementia). This study advocates that the physician attempt to ascertain from family and friends the attitudes and wishes the patient would have expressed had competence been maintained. If it is determined that the patient would not have wished to be sustained in a permanently vegetative state, natural or artificially adminsitered hydration and nutrition may be given or withheld, depending on the patient's comfort. The patient's comfort is felt to be a critical test. For patients in a permanently vegetative state, who presumably cannot experience discomfort, it is held to be morally justifiable to withhold antibiotics, nutrition and hydration (as well as other forms of life-sustaining treatment), thus allowing the patient to die.

A unanimous consensus may never be achieved, for the morality of such decisions cannot be "proven" in the scientific sense.

SUMMARY

The purpose of this essay has not been to defend a uniform position with respect to all patients in a permanent vegetative state. Rather, an attempt has been made to characterize the conflicting issues in this debate in the hope of promoting more widespread interest in, and discussion of, these questions. These issues are germane to virtually all types of medical practice, and the physician's involvement in these dilemmas is both unavoidable and desirable.

Ardent debate about levels of treatment and withholding care will no doubt continue for the forseeable future. A unanimous consensus may never be achieved, for the morality of such decisions cannot be "proven" in the scientific sense. Yet the difficulty of this subject should not preclude society from embarking on an attempt to address these issues. The realities of our medial technologies and financial resources will continue to demand that difficult decisions be made in the clinical realm. An integral part of this decision making must be the commitment to treat the patient with dignity and compassion. The physician does not have the luxury of retreating into inaction in the face of these issues. The urgencies of care required by each individual patient demands specific action or inaction by the physician.

In addressing the challenges of the future, it will be increasingly important for the physician to recognize when continued medical treatment ceases to benefit the patient. In this regard, Landau and Gustafson[14] note: "The development of technologies with the prime aim of prolonging life should be seriously questioned if the ultimate result is destined to be grotesque, fragmented, or inordinately expensive existence."

As suggested by the court cases and consortium reports cited above, there would appear to be a

growing consensus that certain limits to medical care should be articulated. Specifically this consensus recognizes that it is sometimes not appropriate to continue to nurture mere physiologic functioning when it is devoid of human spirit. This dialogue does not threaten reverence for human life. Rather, it serves to firmly establish that human existence assumes ultimate value when a fundamental core, worthy of nurture and reverence, is present in fact or potential. When that fundamental element irreversibly ceases to be present, the patient should be allowed to die naturally and in dignity. As a medical profession and a society we need to work to achieve confidence that we can and will make ethically appropriate responses to the clinical dilemmas we confront.

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Michael J. Brown, M.D. Receives Batt Memorial Award

This award was established in memory of the late Dr. Edward J. Batt, and is given to the outstanding Family Medicine clinical faculty member of the year. Dr. Batt was a long-time South Dakota physician and an Associate Professor of Family Medicine at the USD School of Medicine. Financial support for the award was made possible through contributions to the USD School of Medicine Endowment Association by faculty and friends of Dr. Batt.

Dr. Brown was born in Puyallup, WA and moved to Britton, SD as a small child, graduating from high school there in 1961. Dr. Brown completed his basic science medicine at USDSM and received his M.D. degree from the University of Texas-San Antonio in 1970. He completed his internship at Sioux Valley Hospital in Sioux Falls in June 1971. Upon completion of his graduate training, Dr. Brown became a member of the U.S. Air Force and was assigned to the Air Force Academy at Colorado Springs, CO from July 1971 to July 1974. His duties there included one year in the Ob/Gyn section and two years in general medicine. Following his Air Force duties, he entered private practice in Spearfish, SD in July 1974, where he has practiced since. He is an active staff member of Lookout Memorial Hospital in Spearfish. He has been a member of the Black Hills District Medical Society and South Dakota State Medical Association since 1974. He has been a member of the South Dakota and American Academies of Family Physicians since 1974. He became a member of the Board of Directors of SDAFP in 1981 and is serving as president during 1985-86.

Dr. Brown is a certified Diplomate of the American Board of Family Practice, being recertified in 1983. He has been a sophomore preceptor at USDSM since 1974 and received his initial appointment as Clinical Associate Professor in the Department of Family Medicine at USDSM in 1979. Since 1982 he has offered a clerkship site for the Rural Family Medicine Clerkship. Dr. Brown has consistently received outstanding evaluations by students and faculty. In 1982 he presented two papers at the South Dakota Academy of Family Physicians Black Hills Summer Seminar, receiving outstanding evaluations for both presentations.

Dr. Brown is pictured receiving his Batt Award from James E. Ryan, M.D., Professor and Chairman, Department of Family Medicine, USDSM. The award was made during the 1985 Black Hills Summer Seminar.

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However, if the physician advisor does not change his mind or if the attending physician does not choose to contact the physician advisor, the notice of non-certification will be issued.

Additionally, the attending physician, hospital or patient have 60 days in which to request a reconsideration of a denial. These reconsideration requests must be in writing and sent to SDFMC.

I don't know how many of you read the opinion page in the September 9 issue of *USA TODAY*, but its title was: "The Debate-Bad Doctors." Needless to say we did not come out on top. Of the seven people interviewed only three expressed satisfaction and one of them was a physician.

An AMA nationwide study which was done in 1985 shows the physicians tied with the dentists, behind clergy and pharmacists in the area of ethical standards. It is very interesting study and could be useful if we take heed and try to improve upon the complaints patients have in the physician-patient relationship.

It is difficult to analyze why public confidence has eroded to the point it is at. Perhaps high technology has been the culprit due to the fact more tests are available and demanded and there may be less time spent with the patient and less "laying on of hands." Perhaps it is the higher cost of medical care which can be related to inflation, or directly attributed to liability which forces us to protect ourselves by ordering more procedures than we really feel is necessary. No matter what the cause the problem is upon us.

It is interesting to note that one of the goals for SDSMA Auxilliary President, Shirley Ryan was "Create a more positive image of physicians by our commitment and dedication towards better health care." There are no guidelines to follow but if we take every opportunity that comes about and turn it into a plus for the physicians, rather than a minus, that goal will be realized.

R. G. Gere, M.D.

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Self Education for the Physician — Can It Begin in Medical School?

Robert C. Talley, M.D.*
Charley F. Gutch, M.D.†
Donald B. Witzke, Ph.D.‡
M. Sue Dieken, B.S.§

ABSTRACT

The Department of Internal Medicine of the University of South Dakota Medical School has used a number of strategies in an attempt to introduce students to self-education, and to have students involved in self-education during medical school. A strategy has evolved with use of behavorial objectives, multiple tests, and a computerized program which we believe achieves the following goals. 1. To promote self-education to the student. 2. To introduce the student to the literature and source material of internal medicine. 3. To teach the student the "core material of internal medicine. 4. To have an easily revisable program of cognitive knowledge which is identical on widespread campuses. A number of previous strategies to promote these goals have failed, and these are outlined in order that others may profit by our errors. The current program process is outlined and its strengths assessed.

The majority of educational information a physician obtains after medical school and residency training is acquired by searching readily available personal or library sources. This search is usually with the objective of clinical problem solving or focused increase of knowledge. The "search" often ends with a hurried conversation with a colleague in the hall rather than in the library. Since the literature of medicine is more complete and accurate than any single person's experience or memory, training in self-education for solution of clinical questions by the use of the readily available literature should be part of the physician learning experience during medical school and/or residency training. However, most medical school teaching is delivered by lecture format, or by prepared handouts, with the student as a passive learner.[1, 2, 3]

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At the University of South Dakota, the Department of Internal Medicine has attempted to develop a self-education format to teach the cognitive knowledge portion of the junior clerkship in internal medicine. It is the purpose of this paper to outline our experience using this educational technique.

The University of South Dakota Medical School became a four year, degree granting school in July, 1975, and graduated the first class in May of 1977. Multiple campuses are employed for clinical education in the junior and senior years.

After the first year of operation of a 12 week internal medicine junior clerkship, it was apparent that the curriculum and experiences were not standardized nor uniform on the several campuses involved. Cognitive knowledge was handled by lectures and text assignments. Lecture titles and text assignments were the same on all campuses, however, lectures by various clinical faculty in rotation were not correlated as to content. Testing was done by written examination at the end of each week, by the physician who had given the lectures. The format of these examinations was not standarized. There

was no final examination in the course; the final grade was made up of the attending physicians' evaluations at six week intervals and the average of the weekly test results. The National Board Examination, Part II Internal Medicine was given at the end of the clerkship, but was not used in the grading process.

Since that first year many modifications have been made in the clerkship, in the area of learning skills and rounding techniques, case presentations, number of workups, and student evaluations. In this report we would like to concentrate on that aspect of the curriculum involving the teaching cognitive knowledge.

The goals of the cognitive portion of the clerkship are:

1. **To promote self-education for the student.**
2. **To introduce the student to the literature and source materials of internal medicine.**
3. **To teach the student the "core" material of internal medicine.**

All required lectures were discontinued and a modification of Keller's *System of Personalized Student Education* was undertaken.[4, 5] The departmental faculty generated 12 sets of 20 objectives each, attempting to cover the field of internal medicine. Sets were developed by body system, pulmonary, cardiology, etc., based on general concepts and approach to clinical problems and diseases. Each of the 240 objectives was referenced to a textbook in internal medicine, subspecialty text, or journal articles. Instructional material produced by special agencies — such as *RD* (American Lung Association), *Modern Concepts of Cardiovascular Diseases* (American Heart Association), and the *Primer of Rheumatic Diseases* (American Arthritis Foundation) were also used as references. This mix was sought in order to introduce the student to reading in wide areas.

Since the purpose was not only to present the material in a concise readable format, but also to demonstrate to the student appropriate sources of material, the journal articles chosen were from referred journals as identified in *A Library for Internists III*.[6] Commonly available journals, such as *Annals of Internal Medicine, New England Journal of Medicine, American Journal of Medicine, JAMA* and *Archives of Internal Medicine* were used heavily. Written reference material was selected in preference to audiovisual material since it was felt that reading offers a more efficient use of time and is the most common method of continuing education, once the physician is in practice. The individual student was to work on one set of objectives at a time, at his/her own rate. When the student felt that he/she had successfully mastered the information, he/she came to the Medicine office and took an examination of multiple choice format, over the 20 objectives. To proceed to the next set of objectives the student had to "master the material" at the 90% level. There was no penalty for less than 90% mastery except the need to return to work on the *same* objectives, and subsequently take a second, and if necessary a third test. Three tests for each set of objectives were available. Once the student successfully mastered the set at the 90% level, he/she could choose whatever subsequent set of objectives he/she wished, this choice might be on the basis of patient load or interest. All students were required to begin with set I, which covered emergency care and advanced life support, since this set included a group of skill objectives taught by the faculty using mannequins, arrhythmia reproduction, etc.

In order to help the students two tutorial sessions of one to one and one-half hours each were scheduled each week. The students were not required to attend, but faculty was available during this period. To assure that each tutorial instructor taught the same material in the same manner, a tutorial handbook was prepared outlining the successful completion of each objective using the references cited. These handbooks were available at each of the four teaching hospitals, should the student want to meet with his/her attending physician to review any set of objectives. The handbooks were *not* available to the student without the attending physician present. Finally, it was planned that the student would review each test with his/her attending physician using a manual (prepared by the Department) which stated the reason for each question, why the correct answer was correct, and why each of the distractors was incorrect. The intent of this process was twofold: first, to introduce the clinical attending faculty at the various education sites to the objectives, so that they might point out appropriate clinical examples to the student, and second, to provide the student "a second look" to reinforce learning of the objectives. In this way, an attempt was made to teach self-education as well as cognitive knowledge by requiring the student to construct an answer for each objective through his/her own reading.

It was decided to conduct a final examination over the material covered in these objectives.[1] The goal was long-term retention of the material included in the objectives, which was considered "core" material. It was felt that the end result should be a gain of knowledge, in addition to learning methods by which to gain knowledge. Clinical attending physicians, while very capable to judge student's ability to interact with patients, define problems and outline methods to solve the identified problems, had diffi-

culty assessing the student's cognitive knowledge at the end of the 12 week clerkship. This final exam was keyed directly to the objectives.

For purposes of self-education it perhaps would have been better to present the student with an objective without references, and have him/her attempt to solve it by going to the library, to find appropriate references on his/her own. However, it was felt that because of time constraints of a 12 week clerkship, and the relative inability of medical students to use a library, this first round of self-education should provide appropriate references. The student is also required to look up at least one reference article on each of the thirty patients he/she evaluates during the twelve week clerkship. This is in addition to reviewing the text on his/her patient problems. Whether this requirement is carried out completely and correctly is the responsibility of the student's attending physician.

Grades for the Internal Medicine Clerkship were computed by the following formula: 17% for chart audits, 17% for case presentations, 17% for attending physician's evaluation (each student has two attending evaluations during the 12-week clerkship). The number of objectives successfully completed accounted for 25% of the grade; a set was successfully completed when the student demonstrated 90% mastery of the material regardless of the number of tests or time required. Less than 10 sets completed led to an incomplete grade. The final examination was made up of 100 multiple-choice questions from the bank of 720 questions prepared for testing the objectives, and was worth 25% of the final grade.

This particular program was used for two years. The initial group of students industriously attacked the objectives; the first several groups of students achieved the highest scores on the final examination of any students, even up to the present. They worked the objectives on their own, they studied on their own, and their retention was excellent by the time of the final examination. Of the first 29 students experiencing this approach, 23 completed all 12 sets, four completed 11 sets, and only two completed the minimum 10 sets of objectives. The final examination scores correlated with the number of sets of objectives completed. These initial 29 students were enthusiastic in their evaluation of the clerkship, scoring it extremely high in the areas of planning, clearness of objectives, and the format used. They felt the knowledge, skill and ability imparted were greater than other clerkships.[7]

Insofar as faculty was concerned, the program was successful in standardizing and evaluating the educational program in internal medicine on the widely separated campuses. However, the following problems were observed: (1) The students failed to use the tutorial sessions. (2) Students did not review the objective tests with their attending physicians. More than half of the students never reviewed any of the possible 36 tests given. Those who did meet with their attendings did so no more than three times. This may have been due to the attending physician's time constraints or lack of interest or discomfort in such teaching, as well as the student's own decision. (3) If a student failed to achieve 90% mastery on an examination, he/she would immediately take another examination without studying or trying to increase individual skills. The frustration level for student became quite high after not having reached 90% mastery on three consecutive examinations. When a student felt great frustration with the objectives, the usual reaction was to go the the full-time faculty member in charge of that area of education. That is, the pulmonologist was correctly considered responsible for the pulmonary objectives and exams.

There was no longer an attempt to learn the material, rather an attempt to get past the small exams.

The attending physician did not have opportunity to review them with the student. The community attending physicians complained that students were "gone studying for objectives when they should be in the hospital." They advised that the objectives be discarded, and the students "kept" on the ward, and their reading be directed by the patients seen in ward situations. Pressure on full-time faculty was considerable.

After the initial enthusiasm of students for doing their own work, subsequent students soon developed methods other than self-education to achieve the objectives. Sets of objectives were parcelled out, one student taking cardiology, another pulmonary, one GI, etc.; each student would solve the objectives of the particular set, writing down the material and sharing notes with classmates. Once the student had taken the exam, he/she would underline the area of the notes which seemed to relate directly to the questions asked, before passing notes to the next student. There was no longer an attempt to learn the material, rather an attempt to get past the small exams, originally conceived as "practice exams" for the students' benefit.

These mechanisms by students to make their stressed time more bearable created friction between full-time faculty and students, and did nothing to provide a learning environment. One reason for the student view of mastery of the small exams as an end, rather than a means, was the grading system. Assignment of 25% of the final grade to successful

completion of the twelve sets of objectives, and an incomplete for completion of less than ten sets of objectives, clearly made the student perception of the tests' importance reasonable.

The students seemingly were not learning the objectives, which most of the faculty considered key or core material. The students did not go to tutorial sessions, and since they did not review their examination results with faculty members, faculty was unsure what knowledge was actually gained by students until after the final examination, when little remedial action could be taken.

The slide-tape analysis proved an utter disaster in terms of both the willingness and/or ability of the faculty to update objectives and tests, and the goal of inducing the student to use self-education.

For these reasons the faculty decided to produce an audiovisual slide-tape "evaluation" review for each test. Every student, regardless of score on the test, would immediately undergo a half hour slide-tape presentation of the material covered in that examination. These slide-tape presentations solved the objectives, and discussed each question to solidify the student's knowledge of the particular area. This was to be done after the student attempted to learn the objective on his/her own using the references supplied. It would seem that the production of 33 such slide-tape evaluations would be relatively simple. As it developed, the faculty, unschooled in educational techniques, found this an extremely arduous process. The actual time to produce the 33 slide-tape evaluations was one year.

The slide-tape analyses of tests had several results: First, they permitted the faculty to be reasonably sure each student had the information considered important, and that he/she had opportunity to understand the questions asked. With the use of slides, a question relative to how the diagnosis of gout is made could be demonstrated with a slide showing uric acid crystals in the affected joint fluid. X-rays were used for the pulmonary objectives, electrocardiograms for cardiac objectives, etc. A tremendous amount of material was collected and perhaps transmitted to the students.

The slide-tape analysis proved an utter disaster in terms of both the willingness and/or ability of the faculty to update objectives and tests, and the goal of inducing the student to use self-education. Before the slide-tape evaluations, the program contained only paper materials including the objectives, the tests, the tutorial analysis, and the test evaluations. While it was difficult to update an objective with a new reference, or to change a question, delete an objective or add others, it was possible. Corrections could be made on the originally produced sheets of paper, new exams could be made since they were only 20 questions totally, and new references added to the objectives. Coordination, after a change was made, was necessary so that the changes were initiated at all campuses simultaneously. However, the time commitment for the production of the slide-tape reviews, and the difficulty in editing and changing the tapes and slides, virtually brought the updating of the objectives, tests and references to a halt.

Students quickly became aware that the same objectives were used term after term, and, once written down, could be passed on from student to student. They also discovered that one could take an exam, do poorly, but watch the slide-tape review, which solved the objectives and the questions, take notes, study the notes, and then come back to complete the test with no outside reading or real attempt to learn the material.

Getting through the objectives became the major goal for students not the acquisition of knowledge on the subject. A full year of faculty effort in producing these programs actually was detrimental to the goal of teaching students self-education, and encouraging its practice during the clerkship.

Despite these errors, the faculty continued to believe the basic philosophy was correct. Given the department's limited resources, the modified Keller technique seemed the most practical method to achieve the goal of developing student self-education, providing an introduction to the literature of medicine and presenting a "core" curriculum in internal medicine at multiple sites.

The cognitive material was entirely rewritten with new updated objectives, references, tests and test reviews. This material was entered into a computer assisted instruction (CAI) program in a central computer. Each student uses a computer terminal to "sign into" the CAI program in the computer. The CAI program recognizes the student as currently enrolled in the clerkship, and will accept his/her input. The student requests the set of objectives upon which he/she wishes to work. The CAI program computer *randomly* generates and prints 20 objectives with references in that particular area for that student. There is a bank of 30 to 40 objectives on each of the organ systems stored in the CAI program in the computer. Certain of these objectives are similar, but may use a different reference or state a slightly different question. The CAI program selects only one of any two such objectives for an individual student. Certain objectives have been flagged by the faculty responsible for that set as essential or "core" material to be given to every student: the remainder are randomly selected by the CAI program from the

bank of appropriate objectives. Objective selection may be varied for each set based on the material being covered and/or any unique demands of the material. Therefore, each student should have a relatively unique set of objectives, while still getting the core information necessary to learn that which the faculty deems essential in that particular area.

As before, objectives are referenced to textbooks of general internal medicine, subspecialty texts, and journals; such as the *Annals of Internal Medicine, New England Journal of Medicine, American Journal of Medicine, Journal of American Medical Association,* and *Archives of Internal Medicine.*

After the student has studied the objectives provided and feels capable of 90% mastery, he/she returns to the terminal. The CAI program will then generate an examination consisting of two questions for each objective in multiple choice format. The CAI program has a bank of nine questions for each objective and, can generate four different examinations at random before the same question will appear twice, should the student not achieve 90% mastery on the first, second or third attempt. Again, the questions are keyed to the objectives a particular student received, so he/she will not be given questions over objectives for which there was no opportunity to study. The student answers the questions on the CRT screen; at the same time he/she can type comments into the computer about the questions. Faculty can search the CAI program at any time for these comments in order to review, or revise the questions or the objectives. When the student completes the examination the CAI program will provide the student's score; it also stores the performance of that student, as well as the cumulative data of *all* student responses on each question, for future analysis.

If the student scores *less* than an assigned level on the examination, (currently 60%), the CAI program will sign the student off, and advise him/her to come back after further study. If the student achieves above the assigned percentage, the CAI program will automatically present a review of the test. This review may be combined with slides or photographs, made available to the student at the side of the CRT screeen. Thus, EKG's, x-rays, blood smears, urine analysis, urine sediments, laboratory studies, etc., can be visually displayed. The review itself is in written format on the CRT screen; students seem to prefer this since it is faster to read than to listen to audio tapes. The review is keyed to each question; if the student wishes to review the specific question he/she merely types in "yes" and the question will appear along with the review. The review is keyed to the individual questions and objectives which the CAI program earlier selected for that student.

The student may elect to review only those questions missed, or questions missed and any questions guessed (student has so identified these questions with a (?) when answering), or cover all 40 questions of the examination.

Storing the materials in a centralized computer with each site having a terminal, allows individual faculty to update an objective, pull an objective or add another, change a reference or question, or to delete or add a question at the home site, and immediately have the changes completed for the entire system. Yearly updating of the sets of objectives by faculty is relatively simple.

This system started operation in the 1981 school year; as yet, students apparently have not developed a system to circumvent the need to do their own reading and studying. Past experience suggests this will likely occur, but for the present this system seems to have achieved many of its goals: it presents a core of material in internal medicine, it gives a standard program at four sites, it is easy to update, it is quick to return results, it is usable 24 hours a day. Finally, it is providing individual self-education for the student. It is our hope that each student will learn to gain knowledge in this fashion throughout his/her professional career.

It is difficult to achieve a self-education program when only one department of the school so structures its teaching program.[8] However, we do feel it is possible for a single department to use such a format, as reported by others who have introduced self-education programs.[1, 9, 10]

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Seventh District Medical Society Sponsors United Way Campaign Kick-Off

The Sioux Empire United Way Campaign kick-off for 1985 is being sponsored by the Seventh District Medical Society. United Way Campaign Chairman, Dr. Richard Friess, said, "This is unique inasmuch as to the best of my knowledge it is the first time such an event in the United States has been sponsored by a district medical society. Usually the kick-off is for officers and leaders of the United Way Campaign only. However, the Seventh District Medical Society, to increase motivation, invited all campaign workers and approximately 1,500 people attended."

The motivational session of the kick-off held on Thursday, September 19, was preceded by hors d' oeuvres and non-alcoholic beverages from 5:30-6:30 p.m. The Seventh District Auxiliary gave its support to this project by serving as hostesses and providing the decorations. Decorations were colorful 9' x 3' banners representing the various organizations and agencies which receive funds from the United Way.

"We are very fortunate to have this support, and feel this strongly demonstrats the medical profession's continued interest and involvement in our community," said Bill Barlow, President of the Sioux Empire United Way. Dr. Friess added, "I hope this event which received the enthusiastic support of many doctors and Auxiliary members has strengthened our bond to this community and to one another."

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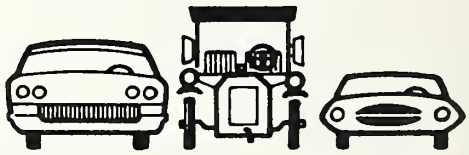

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The AMA Auxiliary nationwide Shape Up for Life campaign is an umbrella for all Auxiliary health projects. "Community Services for Older Americans" is the focus for 1985-1986.

The Auxiliary resolved to establish new and support existing programs to help improve the quality of life for the fastest growing segment of our population. Two major areas of involvement designated for this project are educational and social programs. Educational programs are being developed to help prevent illness, enhance the quality of life and promote the positive aspects of aging. Social programs would accommodate basic needs such as overcoming loneliness and ensuring protection against crime, fraud and abuse.

The AMA Auxiliary Project Bank already contains projects featuring nutrition, physical fitness, medicare explanations and transportation services that are directed specifically to the aging population. The AMA Auxiliary readily provide these ideas on request.

Promoting a positive image of the elderly has prompted the AMA to produce and distribute public service announcements that urge the elderly to stay active and productive. The theme of the PSAs are "Don't retire from life . . . share the experience of a lifetime." These PSAs are available through the AMA Auxiliary, 535 N. Dearborn St., Chicago, IL 60610. (312)645-4470.

As the vast majority of older citizens are not sick, our emphasis will be placed on keeping them well. Encouraging older persons to assume productive roles in the family and community will help reduce problems and benefit their mental and physical health. Auxilians will continue to support and propose programs to fulfill our older citizen's needs.

Shirley Ryan

Shirley Ryan, President
South Dakota State Medical Association Auxiliary

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Future Meetings

December

Physicians in the 90's, Shoreham Hotel, Washington, DC, Dec. 5-9. Contact: Dewitt C. Miner, Dept. of AMA-HMSS, 535 N. Dearborn St., Chicago, IL 60610. Phone: (312)645-5000.

Aloneness and Loneliness, Topeka, KS, Dec. 9-10. Fee: $150. 13 hrs. AMA Category I credit. Contact: Jane Bolte, Div. of CME, The Menninger Found., Box 829, Topeka, KS 66601. Phone: (913)273-7500, ext. 5992.

February

Diagnostic Radiology Seminars, Aspen, CO, Feb. 2-7. Fee: $495. 24½ hrs. AMA Category I credit. Contact: Radiology Postgrad. Educ., U. of Calif., Rm. C324, 3rd & Parnassus Ave., San Francisco, CA 94143. Phone: (415)666-5731.

Trauma Management 1986, U.S. Grant Hotel, San Diego, CA, Feb. 3-5. 18 hrs. AMA Category I credit. Contact: CME, M-017, U.C. San Diego Scl. of Med., La Jolla, CA 92093. Phone: (619)452-3940.

The Twentieth Annual Symposium on Cosmetic Surgery, Hyatt Regency Miami, Miami, FL, Feb. 6-8. Fee: $500. AMA Category I credit hrs. available. Contact: Cosmetic Surgery Symposia, Thelma MacGregor, Cedars Med. Ctr., 1400 NW 12th Ave., Miami, FL 33136.

Strategies in Onocology and Hematology for the Family Practitioner, Saddlebrook Resort, Tampa, FL, Feb. 17-22. Fee: $275. Contact: Marge Adey, U. of Neb. Med. Ctr., Ctr. for Cont. Educ., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402)559-4152.

Current Concepts in Perinatal Medicine, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Feb. 20-21. 13 hrs. AMA Category I credit. Contact: Charles W. Drage, M.D., Dir., CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

13th Pediatric Dermatology Seminar, Eden Roc Hotel, Miami Beach, FL, Feb. 20-23. Fee: $240. Contact: Guinter Kahn, M.D., 16800 NW 2nd Ave., Ste. 401, N. Miami Beach, FL 33169. Phone: (305)652-8600.

Review and Update: General Pediatrics & Family Practice, Sheraton Royal Waikoloa, Kailua, Kona, HI, Feb. 26-Mar. 5. Contact: Marge Adey, U. of Neb. Med. Ctr., Ctr. for Cont. Educ., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402)559-4152.

March

Diagnostic Dilemmas — The Approach and The Answers, Keystone Lodge, Keystone, CO, Mar. 2-7. Fee: $300. Contact: Marge Adey, U. of Neb. Med. Ctr., Ctr. for Cont. Educ., 42nd & Dewey, Omaha, NE 68105. Phone: (402)559-4152.

Common Problems in Pediatrics, Hotel Utah, Salt Lake City, UT, Mar. 5-7. Contact: Wendy Ellis, Dept. of Ped., U. of Utah Med. Ctr., 50 N. Medical Dr., Salt Lake City, UT 84132. Phone: (801)363-1887.

Fourth Annual Critical Care Conference, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Mar. 5-8. 17 hrs. AMA Category I credit. Contact: Charles W. Drage, M.D., Dir., CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

Review and Update: General Pediatrics & Family Practice, Royal Lahaina, Kaanapali Beach, Maui, HI, Mar. 5-12. Contact: Marge Adey, U. of Neb. Med. Ctr., Ctr. for Cont. Educ., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402)559-4152.

Seventh Annual Mammoth Mountain Emergency Medicine Ski Conference, Mammoth Lakes, CA. Mar. 9-14. Fee: $325. 20 hrs. AMA Category I credit. Contact: Daniel Abbott, M.D., Prog. Dir., Med. Conf., Inc., Box 52-B, Newport Beach, CA 92662. Phone: (714)650-4156.

Annual Meeting of the U.S.-Canadian Division of the International Academy of Pathology, New Orleans Hilton, New Orleans, LA, Mar. 10-14. Contact: Dr. Nathan Kaufman, Sec.-Treas., U.S.-Canadian Div. of the Int. Academy of Path., Bldg. C, Ste. B, 3515 Wheeler Rd., Augusta, GA 30909. Phone: (404)733-7550.

Symposium on Facial Skin Malignancies, Copper Mountain Resort, Copper Mountain, CO, Mar. 15-21. Fee: $600. 26 hrs. AMA Category I credit. Contact: Judy Woods, AAFPRS, 1101 Vermont Ave., NW, Suite 404, Washington, DC 20005. Phone: (202)842-4500.

Seventh Annual Update: Occupational Medicine, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Mar. 21-22. 12 hrs. AMA Category I credit. Contact: Charles W. Drage, M.D., Dir. CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

Advances in Uroradiology, Fairmont Hotel, San Francisco, CA, Mar. 22-23. Fee: $175. Contact: Alexander Margulis, M.D., Dept. of Radiology, U. of Calif. San Francisco, San Francisco, CA 94143.

Counseling Strategies for Physicians, Oahu, HI, Mar. 24-29. Fee: $325. 17 hrs. AMA Category I & AAFP credit. Contact: Sam Nixon, M.D., Dir., Div. of CME, U. of Texas Health Science Ctr. at Houston, Box 20367, Houston, TX 77225. Phone: (800)332-8747.

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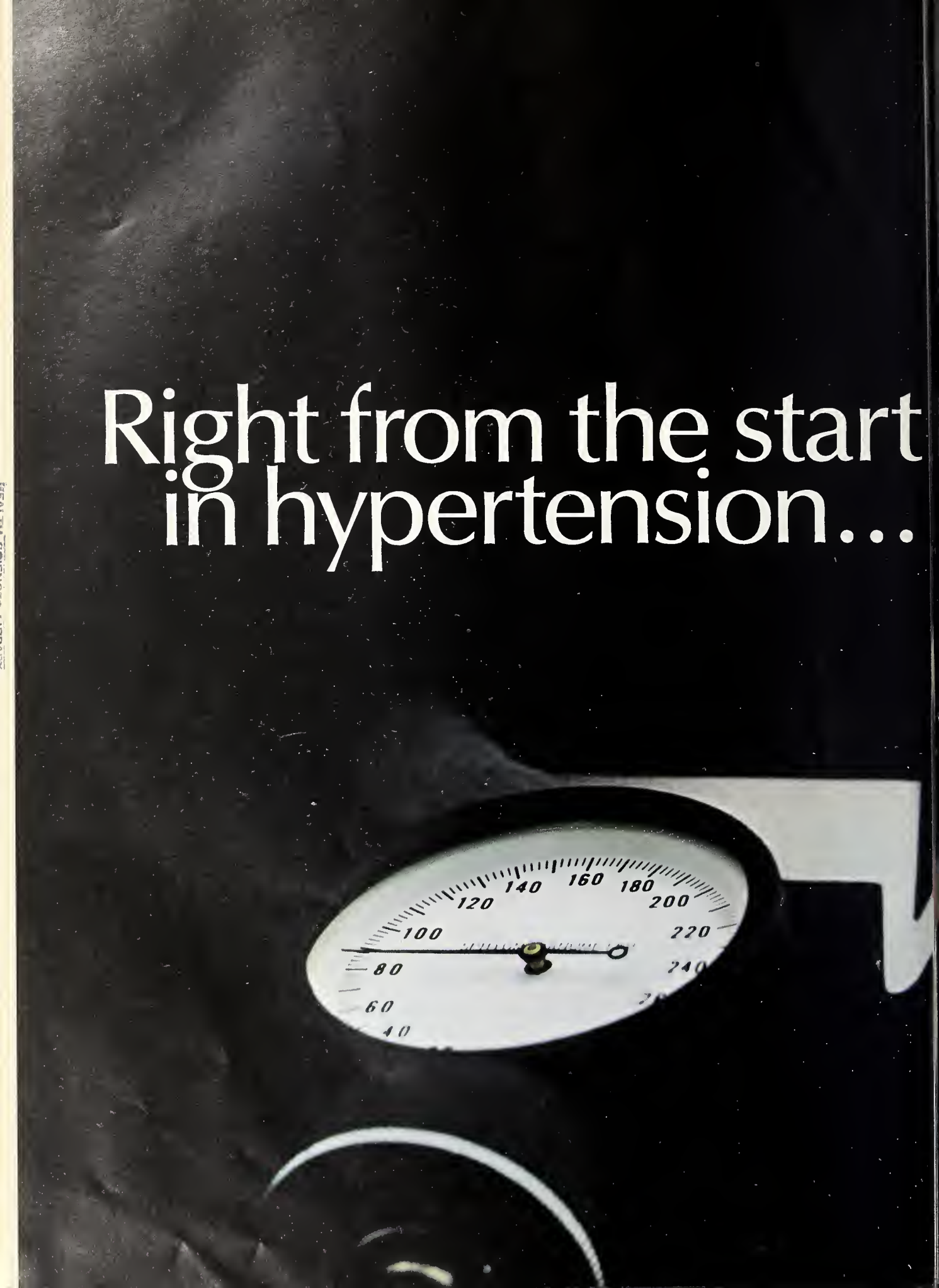

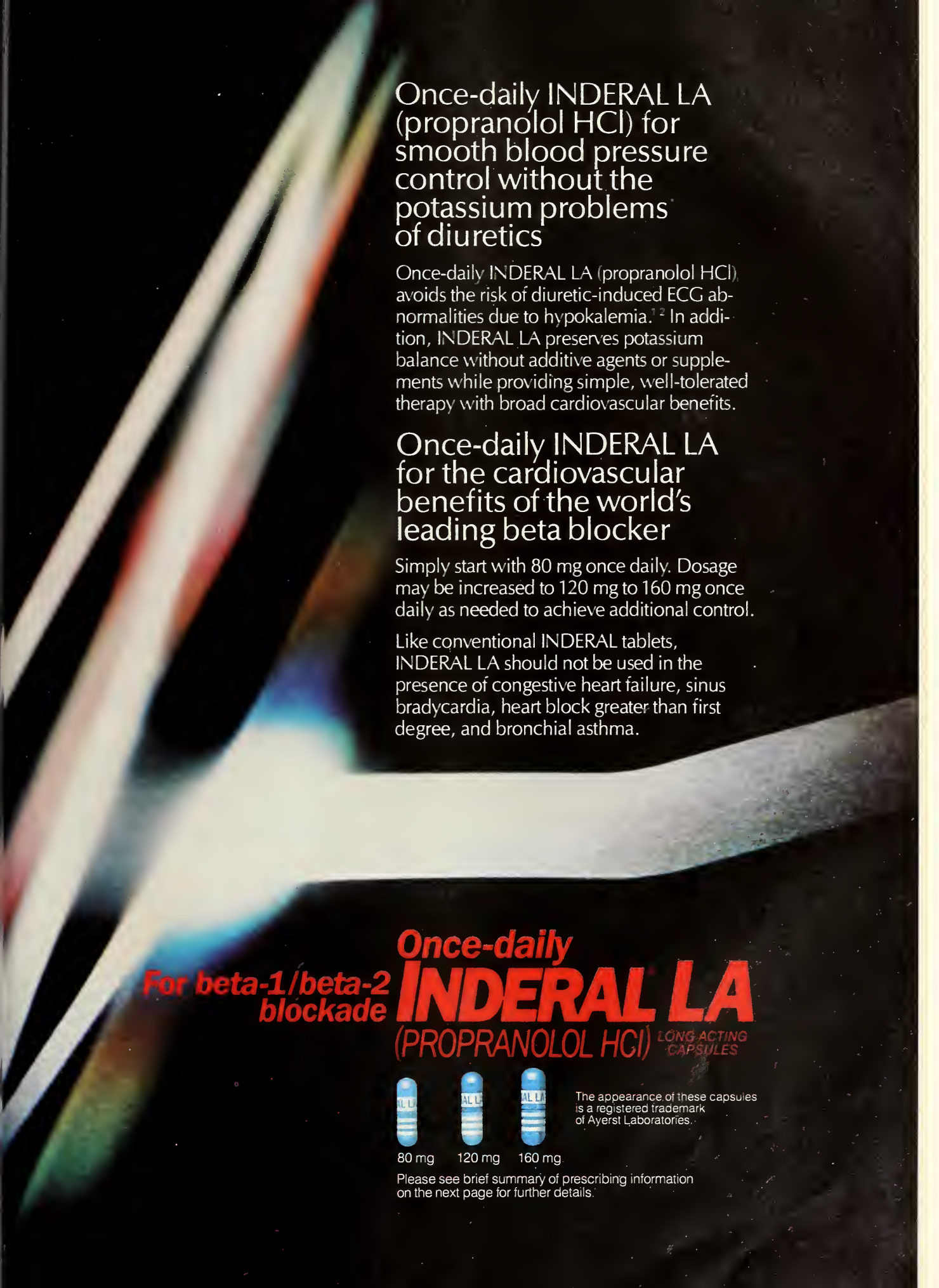

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Simply start with 80 mg once daily. Dosage may be increased to 120 mg to 160 mg once daily as needed to achieve additional control.

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For beta-1/beta-2 blockade

Once-daily

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(PROPRANOLOL HCl) LONG-ACTING CAPSULES

80 mg 120 mg 160 mg

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Please see brief summary of prescribing information on the next page for further details.

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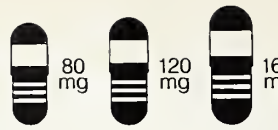

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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*
INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**
DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.
CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock; 2) sinus bradycardia and greater than first degree block; 3) bronchial asthma; 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia, visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

REFERENCES

1. Holland OB, Nixon JV, Kuhnert L: Diuretic-induced ventricular ectopic activity. *Am J Med* 1981;70:762-768. **2.** Holme I, Helgeland A, Hjermann I, et al: Treatment of mild hypertension with diuretics. The importance of ECG abnormalities in the Oslo study and in MRFIT. *JAMA* 1984;251:1298-1299.

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Index to Volume XXXVIII

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SORBITRATE®
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Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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A Comprehensive Treatment Approach for Patients With Chronic Low Back Pain

Edward F. Anderson, M.D.*
Julie A. Hegstrum†
Gregory J. Charboneau‡

ABSTRACT

Low back pain, which is second only in frequency to headaches as a chronic pain problem, is one of the most common and costly health problems in America. The acute and chronic forms must be carefully differentiated in order to avoid misapplying treatment modalities. Recent research indicates that the release of neurochemicals is responsible for the close relationship that exists between the psychological and physical response to pain. In patients with chronic low back pain, psychological evaluation and behavioral assessment should be done early and concurrently with medical treatment. The steroid lumbar epidural nerve block is often useful in the treatment of patients with radicular symptoms. Useful psychological counseling interventions are described.

One of the most common and costly health problems present in America today is pain.[1] More than 86 million people suffer from some type of chronic pain, whereas eight million Americans were disabled by chronic low back pain in 1977 and twelve million were disabled in 1984.[2, 3, 4] According to Deyo, almost 80% of all adults suffer low back pain some time during their lives.[5] Bresler (1979) stated that more than 80% of physician office calls were for pain related problems, and he estimates that more than 30 million visits to physicians occur annually for low back pain. Seres (1985) estimated that $11 billion in income is lost annually in the United States because of work disability, a significant amount of which is caused by chronic pain.[6,7] In excess of $900 million is spent each year on over-the-counter medications whereas $1.5 billion is spent on prescription pain medications.[8, 9]

The International Association for the Study of Pain Subcommittee on Taxonomy proposed the following definition of pain: ''An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.''[10] This definition can be applied to both acute and chronic pain. Severe **acute pain** is a symptom and serves as an essential warning and protective function. It compels withdrawal from potentially destructive situations and demands relief. Once the diagnosis is established, narcotics generally provide effective relief. Usually severe acute pain can be effectively managed within a matter of hours to several days before the underlying cause is fully resolved.[11]

Chronic pain, on the other hand, may appear mysteriously and be associated with an innocuous or trivial event. Exhaustive diagnostic studies are often normal or unrevealing. It is virtually never a medical emergency, remains intractable or often severe in an otherwise normal individual to the point that it becomes the disease rather than a symptom, and is present at least six months. Narcotics are contraindicated, poly-addiction is often present, and complete relief and cure may not be possible. It is important to differentiate the two categories of pain since the misapplication of therapies for acute pain to patients with chronic pain often acts to reinforce and perpetuate illness behaviors.[11]

Although pain has been defined as a ''sensory and emotional experience,'' many have replaced the ''and'' in the pain definition with an ''or.'' With this

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''or'' comes an artificial barrier to treatment, which may result in excruciating pain to a patient who must wait to exhaust medical treatments before having the opportunity to utilize psychological intervention.[8]

Low back pain is second in frequency only to headaches as a chronic problem, comprises more than 50% of the complaints of the patient population in a busy comprehensive pain clinic facility, and causes 15% of adults to consult a health care professional at one time or another.[12] The pain experience with low back pain is multidimensional as is the pain experience that includes sensory, affective, and evaluative components resulting in cognitive and emotional reactions to pain.[13] Greenhoot and Sternbach (1978) contend that ''no useful'' purpose is served by separating organic from functional pain.[14] There are those who feel that it is not possible to regard pain as something that occurs independently of the individual's emotional state.[15]

According to Deyo, almost 80% of all adults suffer low back pain sometime during their lives.

The basis for the view that pain is a psychophysiological process is supported by recent evidence of neurochemicals involved in the transmission and modulation of nociceptive impulses.[16] These morphine-like substances are produced within the body, are known generally as endorphins and enkephalins, and are correlated with the alleviation of pain.[17] The opiate receptors presently known to be located throughout the central nervous system are comprised of the mu, delta, kappa, epsilon, and sigma receptors. Beta endorphins are the endogenous agonists for the epsilon receptors. Enkephalins are the endogenous agonists for the mu and delta receptors. Morphine and certain other narcotics are the exogenous agonists for the mu receptors.[18]

Bowsher theorized that enkephalinergic interneurons located on the boundary of the substantial gelatinosa are driven, hence inhibit nociceptive impulses, by peripheral A-delta afferents and by serotoninergic (5-HT) descending fibers. Nociceptive impulses carried by the C fibers are thus inhibited by higher centers.[16] Descending signals from the higher control centers can trigger this neurochemical modification, which can be antagonized or reversed by naloxone (Narcan), an inhibitor of opiates.[17, 19, 20] Current research indicates that if an individual expects relief it will be obtained, most likely through the release of enkephalins and endorphins.[21, 22, 23] Gaiardi et al (1983) reported that behavoral conditioning techniques will also bring about the production of endogenous opioids for the relief of pain.[24] Janal et al found that increased endogenous opioid levels are associated with certain types of behavior.[25]

Melzack, Leibeskind and Paul suggest that in order to adequately treat the complexities of pain, the effort must be multidimensional and multidisciplinary in nature.[26, 27] Rowlingson states that a comprehensive pain control facility represents an association of specialists who have knowledge about the specific differences between acute and chronic pain, interest in patients with complex pain problems, time to evaluate completely and talk with the patient, readily accessible opportunity for multidisciplinary input to the thorough evaluation, and availability of all current modes of treatment. He also asserts that psychological evaluation and behavioral assessment is part of the pain clinic evaluation and should not be done out of frustration when all other resources have been exhausted, but rather early in and concurrent with medical treatment.[28]

Draspa in 1959 and Seres and Newman (1976) had significant success in decreasing chronic pain (greater than 80%) as measured by prescription medication use, when employing a multidisciplinary regimen consisting of cognitive-behavioral therapy, transcutaneous electrical stimulation, exercise, and reduction of medication.[29, 30] Cognitive-behavioral therapy approach suggests that by changing a patient's behavior the pain might be reduced or brought under control. The basic premise is that if patients learn to focus on something other than their pain, they will feel and function better.

It is important to differentiate the two categories of pain since the misapplication of therapies for acute pain to patients with chronic pain often acts to reinforce and perpetuate illness behaviors.

Gottlieb and his associates designed a program in 1977 utilizing cognitive-behavioral therapy, biofeedback assisted relaxation training, self-control techniques, assertiveness training, a medication reduction program and physical therapy for the treatment of chronic low back pain. Their patients experienced improvement in: medication use, walking distance, sitting tolerance, hamstring range, strength flexibility, pain behavior, and understanding of the pain and anxiety relationship.[31]

Cailliet noted that the main sites of low back pain are the posterior longitudinal ligament, the interspinous ligaments, the facet joints, the deep muscles, and the nerve roots with their dural coverings. Eighty to ninety per cent of patients with low back pain suffer from postural defects. The mainstay of low back pain management is conservative therapy

which includes almost any intervention that avoids surgery.[32] The basic premise is that inflammatory changes in the above structures will subside with immobilization. Standard medical treatment such as rest, heat, massage, ultrasound, analgesics, muscle relaxants, and traction have been useful. Many patients with acute low back strain, spinal stenosis, facet syndrome, and the lumbar intervertebral disc syndrome will respond to the above modalities. Medical treatment usually begins before the patient is referred to the pain clinic by the primary or consulting physician. Patients not responding to the above medical therapy and having objective signs of acute or chronic back strain with lumbar disc disease will benefit by referral to a multidimensional pain clinic.

Low back pain is second in frequency only to headaches as a chronic problem —

A questionnaire should be given to the chronic low back pain patient initially before treatment at a pain clinic for baseline subjective interpretation of pain. This will indicate the degree and location of pain of structural origin, the affective responses to the pain, and a baseline reference for future documentation.[12]

When more conservative therapy has been unsuccessful, the patient with acute and chronic low back pain may require a nerve block. The nerve block most commonly used in a patient with radicular symptoms is the steroid lumbar epidural. This is based on Hakelius' idea that nerve root irritation with resultant inflammation was responsible for low back pain and sciatica.[33] Goebert (1960) suggested adding hydrocortisone for its anti-inflammatory properties.[34] Seghal and Gardner (1960) reported on the beneficial use of steroids given intrathecally whereas Winnie (1972) reported the use of local anesthetics and steroids into the lumbar epidural space for low back pain.[35, 36] Delaney et al (1980) reported that the injection of a local anesthetic and steroid into the epidural space is safe with no neural tissue damage apparent histologically.[37] The beneficial effect of the injected medication is directly related to the interval of time between the onset of pain and treatment.[12]

The lumbar **epidural injection** involves the injection of a preservative free anesthetic such as 100 mg xylocaine or 25 mg bupivicaine and a steroid such as 80 mg methlyprednisolone acetate or 50 mg triamcinolone diacetate into the epidural space at the appropriate level between the first lumbar vertebra (L1) and the first sacral vertebra (S1).[38, 39, 40] Injection of the depot steroid as close to the level of nerve root irritation into the epidural space can provide a significant decrease in the patient's pain due to the antiinflammatory effects of the steroids. The procedure may be repeated every one to two weeks for a total of three blocks in a six month period. The caudal approach to the epidural space may be necessary in some patients with pain due to scarring following lumbar laminectomy with intervertebral disc excision. The epidural approach with depot steroids is thought not only to be beneficial in patients with discogenic pain but also those with posterior facet joint impingement.[28] Trigger point injections with a local anesthetic and occasionally a depot steroid into areas of low back muscle spasm and/or ligamentous insertions to fascia (such as the posterior superior iliac spine) may diminish areas of inflammation, muscle tension, and pain and aid in the patient's total recovery.

The nerve block most commonly used in a patient with radicular symptoms is the steroid lumbar epidural.

In patients with chronic low back pain, psychological counseling should be administered simultaneously with the initiation of medical treatment when indicated. Counseling interventions being used by the authors are cognitive-behavioral techniques including: relaxation training, biofeedback, imaginative transformation of context, somatizations and behavioral control. Relaxation training is a technique that allows an individual to control muscle tension through muscle tensing and relaxing exercises. Biofeedback involves the use of tension monitoring devices to help the patient become aware of and control muscle tension. The imaginative techniques are designed to help the patient in pain control nonproductive and anxiety causing thoughts. Somatization involves assisting a patient to reinterpret painful stimuli. The objective of the above therapy is to have the patients become aware of their affective or emotional response to painful stimuli, to assume a more active role in controlling their pain, and, hopefully, to become a more productive member of society.

In patients with chronic low back pain, psychological counseling should be administered simultaneously with the initiation of medical treatment when indicated.

In conclusion, low back pain is a common problem involving a broad spectrum of society. One must

appreciate the difference between acute and chronic pain to establish effective treatment modalities. Chronic low back pain is a complex entity, and treatment of patients with this problem is time consuming and involves multiple specialists due to the intense interaction of physical and psychological factors. Evidence has been presented and continues to accumulate showing that simultaneous medical and psychological management is effective in chronic pain by decreasing medication abuse, increasing functioning, improving coping mechanisms, and decreasing the excessive utilization of health care services in spite of persistent complaints of verbal pain. The objective of early simultaneous medical and psychological management of patients with chronic low back pain is to help the patients become more aware of the structural and affective components of their pain, to avoid further deterioration into the complex chronic pain syndrome, and to enable the patients to assume a more active role in control of their pain thereby becoming a more productive member of society.

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May this Holiday Season
and the New Year
bring you much happiness, health
and good fortune.

The Staff of SDSMA
Bob Johnson, Patty Butler, Jan Anderson, Jeri Spars
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11th ANNUAL

BLACK HILLS WINTER SKI SEMINAR

ON TRAUMA, OPTIONAL ACCREDITED ADVANCE TRAUMA LIFE SUPPORT (ATLS) COURSE, PLUS FORUM ON PREPAID HEALTH CARE IN SOUTH DAKOTA

FEBRUARY 6, 7, 8, 1986

HOLIDAY INN OF THE NORTHERN BLACK HILLS, SPEARFISH, SOUTH DAKOTA

Hosted by the South Dakota Academy of Family Physicians

This program has been reviewed and the Trauma Seminar is acceptable for 12 prescribed hours, and the accredited ATLS course is acceptable for 19 prescribed hours by the American Academy of Family Physicians, and 12 and 19 hours Category 1 AMA Physician Recognition Award.

WEDNESDAY, FEBRUARY 5, 1986

1:30 p.m.	SDAFP Board of Directors Meeting
7:00 p.m.	Forum on Prepaid Health Care in South Dakota

THURSDAY, FEBRUARY 6, 1986

Trauma Seminar and Accredited ATLS Course

MORNING SESSION

Michael J. Brown, M.D., Moderator

6:45-7:15 a.m.	Registration Complimentary continental breakfast
7:15-7:30 a.m.	Introduction, Course Overview
7:30-8:10 a.m.	Initial Assessment
8:15-8:55 a.m.	Airway Management
9:00-9:40 a.m.	Shock
9:45-5:00 p.m.	WINTER SPORTS TIME

EVENING SESSION

Richard C. Finley, M.D., Moderator

5:00-5:30 p.m.	Registration Complimentary coffee, hot wine and hot buttered rum
5:30-6:10 p.m.	Thoracic Trauma
6:15-6:55 p.m.	Abdominal Trauma
7:00-7:45 p.m.	Burns
7:45 p.m.	EVENING FREE

FRIDAY, FEBRUARY 7, 1986

MORNING SESSION

Richard W. Honke, II, M.D., Moderator

7:00-7:30 a.m.	Registration Complimentary continental breakfast
7:30-8:10 a.m.	Head Trauma
8:15-8:55 a.m.	Extremity Trauma
9:00-9:40 a.m.	Spine and Spinal Cord
11:00-2:00 p.m.	(ATLS course participants only) Surgical Skill Lab Skill Stations I. Airway II. Shock (Mast Pants, IVS) III. Head Trauma IV. Spine Immobilization
9:45-5:00 p.m.	WINTER SPORTS TIME

EVENING SESSION

Clark W. Likness, M.D., Moderator

5:00-5:30 p.m.	Registration Complimentary coffee, hot wine and hot buttered rum
5:30-6:10 p.m.	Spine and Extremity Immobilization
6:15-6:55 p.m.	Pediatric Trauma
7:00-7:45 p.m.	Obstetrical Trauma
8:00 p.m.	Social and Buffet sponsored by Marion Labs and SDAFP Family Practice Club

SATURDAY, FEBRUARY 8, 1986

MORNING SESSION

Joel B. Huber, M.D., Moderator

7:00-7:30 a.m.	Registration Complimentary continental breakfast
7:30-8:10 a.m.	Stabilization and Transportation
8:15-8:45 a.m.	Panel — All trauma seminar speakers
9:00-1:00 p.m.	(ATLS course participants only) Skill Stations Initial Assessment Triage Scenario Written Test
1:00 p.m.	SEMINAR CLOSES WINTER SPORTS CONTINUE

MAKE PLANS TO ATTEND NOW, WRITE:
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FAMILY PRACTICE
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The Unrelenting Fragmentation of Medical Care*

G. Gayle Stephens, M.D.

The speaker, the director of a sleep laboratory, was lecturing to family practice faculty and residents about sleep disorders. He told us that there are 100 million people — almost half the population — with one or more of the known sleep disorders, and 20 million of them consult a physician about their problem. A study of 1,400 patients showed that 35% had a diagnosable psychiatric disorder, and 25% had narcolepsy. Of the disorders afflicting the remainder, he placed particular emphasis on sleep apnea, which can cause death by inducing hypertension and right ventricular failure.

We asked the speaker about his criteria for referral to a sleep lab. He replied that anyone who was functionally impaired by abnormal sleep should be studied by polysomnography. We protested that referral of every symptomatic patient would be impossible, but he insisted that treatment should not be undertaken without proper diagnostic tests. "You wouldn't treat a patient with hypo- or hyperthyroidism without laboratory tests. It's the same with sleep disorders."

"It's *not* the same," we argued. "Thyroid tests are easily available and inexpensive. How many sleep tests can you do? How much do they cost?"

"One per night and $750 to $1,000," he replied.

The speaker then showed us a map of the United States, indicating the locations of the 100 sleep labs and implying that polysomnography was available to most physicians and their patients.

We pressed him about the relation of sleep apnea to hypertension. Should sleep apnea be considered as a cause of secondary hypertension? Would the presence of sleep apnea and hypertension in a patient constitute evidence that the former caused the latter? Should all patients with hypertension be investigated for sleep apnea? None of these questions were resolved, and the discussion ended without being completed to everyone's satisfaction.

This clash of conflicting perspectives within clinical medicine dramatized one reason why the costs of medical care are so out of control. Runaway costs are much less the result of abuse or greed than of science and technology run amok. Who can deny that sleep research is scientific and has produced clinically useful information? Who can blame physicians for enthusiastically promoting their new specialty? Who can refuse patients access to sleep labs? Yet to follow our guest's advice would add billions of dollars to the nation's medical bills. Is that scientific? or even sensible?

There is a relentless and seemingly irresistible drive towards the establishment of new specialties and specialty clinics. This has now been accomplished with chronic pain, alcoholism, drug addiction, eating disorders, premenstrual syndrome, smoking cessation, sports medicine, memory loss, sexual dysfunction, stress management, geropsychiatry, and, most recently, anxiety and phobias — and this list represents only a fraction of the total. Do we intend to keep going until we have a specialty for every diagnostic rubric in ICD-9?

The rationale for any of these new specialties is as persuasive as that for any other. Research produces new information and new experts; industry creates new technology; business generates capital for investment in new facilities, equipment, and personnel, and marketing builds a new clientele of consumers. Each new development is hailed as a "breakthrough," hyped by the media and uncritically accepted by a public that yearns for perfection and immortality. One is looked on as antiscientific, anti-intellectual, and even morally reprehensible if one ventures to suggest that this massive fragmentation of medical care has a dark side, that its benefits may not outweigh its liabilities, or at the very least that its benefits have not been established by evidence. One is reminded of the tales of the emperor's new clothes and the sorcerer's apprentice. We seem to be embarrassed to look at the emperor's nakedness, and we are terrified that we do not know the magic words to stop the sorcerer's stick from drowning us with pails of water.

Fortunately, the 100 or so polysomnographers in the nation will not be able to do sleep studies on 10 or 20 million patients in the foreseeable future. One can hope that they can learn to function as genuine consultants to physicians and their problem patients, alleviating the suffering of some and curing a few; that they will resist the temptation to sell their limited skills and knowledge to the public directly; and that God will save them from professional marketers. Should they attempt to deal directly with the millions of people who are fatigued, sleepy, or depressed, who snore or have restless legs and occasionally kick their bed partners, they will find out soon enough that primary medical care is not their bag — and the public will surely be better off for that.

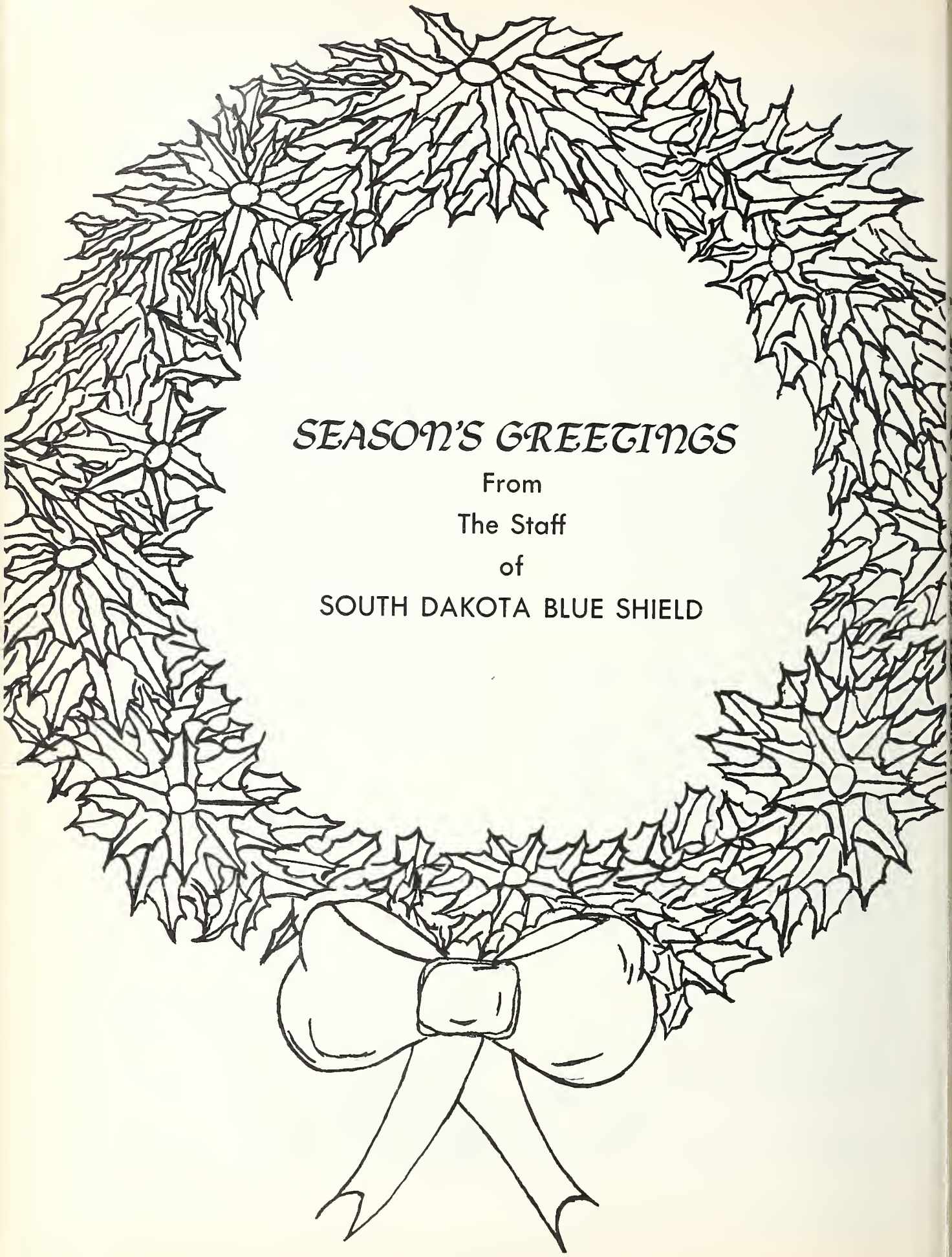
*Reprinted from CONTINUING EDUCATION FOR THE FAMILY PHYSICIAN. Volume 20, No. 7, July 1985, pp.478-479.

SDAFP News Changes Format

The SDAFP Board of Directors announces that, effective January 1986, Chapter News will change format. A Newsletter will be mailed to all members on a timely basis and Chapter News will no longer be printed in the SOUTH DAKOTA JOURNAL OF MEDICINE.

This change is necessitated by the 'new medical environment.' Significant and rapid changes necessitate providing more and timely information to members in a format more likely to be read by all Academy members.

The Academy would like to thank the SOUTH DAKOTA JOURNAL OF MEDICINE for allowing us to be part of their publication during these past eleven years. We wish you well.


SEASON'S GREETINGS
From
The Staff
of
SOUTH DAKOTA BLUE SHIELD

I would like to spend some time talking about marketing. In my estimation this is synonymous with advertising. Almost every magazine coming across my desk has some reference as to how we, as physicians, will have to market ourselves as many hospitals and other health care providers already are doing. The thought makes me ill. Too bad health care expenditures have to include a big budget item such as advertising which is, as most of you know, very expensive.

There is a type of marketing we could all practice and it would be very beneficial. A speaker at a recent meeting called it, "Internal Marketing." This depends on you and your office staff and how patients feel and think about their relationship with you. Patients spreading a good word about you and your office will do more good than a full page ad or the Yellow Pages. Perhaps a look at your scheduling procedure is in order so there are not long waits, or maybe a little more time can be spent with a patient if needed. Along with this, your office staff should be just as caring and helpful.

If we maintain our professionalism and practice internal marketing, I am sure we will be able to preserve our share of the patient market. Let us not turn into hucksters marketing our capabilities such as the fast food chains do.

R. G. Gere, M.D.

R. G. Gere, M.D., President
South Dakota State Medical Association

South Dakota Foundation for Medical Care

The Senate Aging Committee has recently begun holding hearings on the Medicare Prospective Payment System and its impact on the quality of patient care. Individual physicians have testified that they were pressured by hospital UR committee to release patients prematurely and children of beneficiaries have complained that patients were not informed of their appeal rights until after discharge.

We believe that the medical community in South Dakota has a high regard for the quality of patient care and will not deliberately discharge Medicare patients who still require acute level of care. However, there have been instances of misunderstandings pertaining to the patient's coverage under prospective payment. We realize that the patients will usually seek clarification from their physician, and therefore, we would like to address concerns pertaining to the patient's liability for hospitalization under prospective payment.

We have received calls from patients who have been told that they would have to be discharged because they exceeded the average stay that Medicare paid for a DRG. This is very misleading. There is no limit on the number of days of hospitalization "allowed" by Medicare for a DRG. Although the hospital receives an average payment per DRG for an individual case, the hospital is required to provide the services as long as the patient requires acute care.

SDFMC is obligated to investigate all allegations from Medicare beneficiaries that they were prematurely discharged or were misled as to Medicare coverage. We believe that the small number of confrontations in South Dakota results from the close rapport between patient, hospital, and medical staff that exists in this State, and for this you should be commended.

University of South Dakota School of Medicine
"... providing medical education, service and research for South Dakotans"

Family Medicine Junior Clerkship

Loren Jarratt, Ed.D.*
Jim Ryan, M.D.†

ABSTRACT

During the 1984-1985 school year the Department of Family Medicine instituted a required four week clerkship in Family Medicine during the junior year. The objective was to provide ongoing contact with the practice of family medicine throughout the entire four years of medical school. The design and structure of the clerkship are described. Evaluation was ongoing during the first year of this program and included student evaluations as well as faculty evaluations. Review after the completion of one full year indicated success in meeting the educational goals, and a high level of student satisfaction with the clerkship.

INTRODUCTION

The Department of Family Medicine, University of South Dakota School of Medicine, during the 1984-85 school year initiated a required one month Family Medicine Junior Clerkship (FMJC) in the third year of the medical school curriculum. The addition of the clerkship into the junior year insured continued student exposure to family medicine during each of the four years of medical school. Family medicine offerings, other than the FMJC, are a variety of courses, seminars, etc., during the freshman and sophomore years, a sophomore preceptorship, and Rural Family Medicine Clerkship (RFMC) and various family medicine electives during the senior year.

Two years before the first clerkship, the department proposed it to the Curriculum and Evaluation Committee (C&E) at the medical school, submitted and had accepted a federal grant for partial funding of the curricular change, and had the concept of the FMJC approved by the South Dakota Board of Regents. One year before the first clerkship, a committee composed of Department of Family Medicine full-time faculty and other faculty of the medical school developed a philosophy, goals, and objectives for the clerkship which were compatible with earlier established department educational programs. The committee agreed the clerkship should: 1) continue the educational continuum for training family physicians, 2) emphasize continuing, comprehensive patient care, 3) provide a model of comprehensive patient care supplemented by specialties and 4) relate to the goal of training family physicians within South Dakota.

Difficulties were compounded by communication problems created by the placement of multiple junior clerkship sites at Sioux Falls, Vermillion, Yankton, Tyndall, and Rapid City, the goal of insuring structured, common educational experiences, appropriate to the education of junior students, and the use of teaching techniques and skills which allow students, who have been exposed to factual information during the first two years of medical school, to learn to use that information in solving individual and family health problems.

CLERKSHIP LEARNING OBJECTIVES

The FMJC Committee recommended specific learning objectives be achieved during the clinical experience. Those student objectives are:

1. Conduct a medical interview so that data is gathered effectively and efficiently.
2. Conduct an appropriate psychosocial inquiry.
3. Establish relationships and use techniques that have therapeutic impact on the patient.
4. Communicate effectively with patients, physicians, and colleagues.

* Educational Consultant to Dept. of Family Medicine, USD School of Medicine, Sioux Falls, SD.
† Professor; Chairman, Dept. of Family Medicine USD School of Medicine, Sioux Falls, SD.

5. Deal appropriately with psychosocial, sexual and other family problems.
6. Do complete health screening examinations, noting the different techniques between adult and child examinations.
7. Use problem solving techniques when organizing patient data into a management plan.
8. Conduct patient education, including the use of educational handouts and use of audiovisual teaching modalities.
9. Use community resources available to the physician and patients.
10. Spend one night/week and one weekend/ clerkship on call.
11. Accept responsibility for attending the educational modules on common health topics, and the information presented.

CLERKSHIP EDUCATIONAL DESIGN

Several important features were scheduled into the daily student schedule of the one month Clerkship. The curriculum committee believed the modeling provided by a practicing family physician was of primary importance to junior students; each student was scheduled into an ambulatory setting from 1:00-6:00 p.m. each afternoon. The placement of students with family physicians was to facilitate the transition from factual basic science learning to a more cognitive, preceptive thinking approach using information from multiple origins affected by relationships involving family members, employment, etc., and translating that data into decision making and problem solving.

A second primary consideration was that all students continue learning in regard to common health problems seen in ambulatory settings. The committee developed the concept that educational modules were to be teleconferenced from 10:00 a.m. to noon each day by department full-time faculty. Module topics were determined by using lists of ranked health problems seen in family physician offices. The department thereby correlated the educational module topics with patient problems seen in the clinical setting. Each student was also given handouts during the modules, and a resource manual during orientation containing assigned readings. The first day of the clerkship, students were administered a pre-test (not graded) over common health problems, to familiarize students with the post-test and assess their base of knowledge. The last day of the clerkship, a post-test was given which correlated with the readings, module topics, and health problems seen in clinics.

Other committee concerns involved morning activities prior to the modules, evening and weekend activities, and other clerkship benefits. Morning activities were determined by the clinical faculty member and included hospital rounds, community resource visits (nursing homes), and other appropriate experiences. Evening and weekend experiences included on call, resource reading time, etc.

Possible benefits derived by students were exposure to: 1) the referral process and related health professionals (specialists, nurses, radiologists, etc.), 2) families and the effect individual members have on patient problems and the effect patient problems have on families, 3) practice management (records, billing, responsibilities in partnerships, etc.) 4) realization of how a family physician differs from other specialties and how a student's values and attitudes may or may not fit into his/her selection of family medicine, 5) comprehensive care by its nature requires broad training to handle some 95% of the health problems seen in an ambulatory setting, and 6) the importance of communication, relating to patients, and patient education to increase compliance.

Included in this important area are listening skills, verbal and non-verbal expressions of concern and compassion, skills of patient motivation, and a belief in dignity for the patient.

Orientation sessions are conducted before each clerkship for students and clinical faculty by department full-time faculty. The sessions stress the responsibilities of students and faculty, the evaluation and grading system, and the goal of the department to develop, implement, and facilitate a successful and valued family medicine learning experience.

CLERKSHIP EVALUATION

The committee responsible for the overall direction of the clerkship developed instruments to evaluate student performance, faculty teaching, and the quality of the experience. These are evaluated and revised to meet the changing needs of the Department of Family Medicine. Evaluations include:

1. Student evaluation — During the FMJC students are evaluated on oral case presentations, weekly clinical faculty observations of students with patients, by clinical and full-time faculty at the end of the clerkship and by an optional student self evaluation — used by students to evaluate their own strengths and weaknesses for discussion with clinical faculty. In addition the students are given the pre-test to determine base knowledge, and as a familiarization of the post-test, and a post test at the conclusion of the FMJC for grading. The questions in the pre and post test correlate with the daily educational module topics, articles in the student resources manual describ-

ing common health problems, and clinical patient problems.

2. Faculty evaluation — Evaluation of all faculty occurs during each clerkship. Included in the evaluations are full-time and clinical faculty who instruct students, the evaluation of faculty presentation skills, and content of the presentations for the educational modules.
3. Project evaluation — Committee meetings have been conducted repeatedly; prior to the beginning of the clerkships, during and after clerkships to ascertain the strengths and weaknesses of the program, and to determine future change in the clerkship. Committee decisions have been based on student and faculty feedback in regard to educational modules, faculty effectiveness, and clinical settings. The feedback occurs through evaluation forms, individual contact, and the telephone and teleconferenced comments.

CLERKSHIP RESULTS

Evaluation of the various components of the FMJC have been completed for the 1984-1985 clerkships. Results indicate overall student satisfaction with the ambulatory settings, faculty, educational modules, morning activities (8:00 to 10:00 a.m.), and on call experiences. Students questioned the clarity and appropriateness of the post-test after the first clerkship. The test was modified for the second clerkship, and student satisfaction improved.

A second area of student concern was the amount of reading responsibility in the student resource manual. The manual contains 33 articles with 30-50 pages per article. Subsequently, eight of the articles were assigned with questions from the articles included in the post-test. The remainder of the articles were retained in the manual as a resource for problems seen in the office.

Two student comments were fairly typical of student feedback. "I thoroughly enjoyed this clerkship. The reading material is ominous, but usually helpful. This was the only clerkship that gave me experience in outpatient medicine, and it was not only enjoyable but also practical!" "I felt this was an excellent clerkship. I liked the teleconferences with lectures for the first hour, and problem solving the second hour. The case presentations at the end were great.

SUMMARY

A new clerkship in Family Medicine has been incorporated into the third year at the University of South Dakota School of Medicine. Student objectives were developed to clarify the direction of educational experience. The design of the clerkship revolves around ambulatory, hospital, and community settings, educational modules, reading times, and on call experiences. Goals of the clerkship stress problem solving, continuity of care, comprehensive care, a family approach to care, and common health problems in ambulatory settings. Evaluation for 1984-1985 indicate student satisfaction and clerkship educational success.

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At the SD Medical Association's Summer Retreat, I presented an Auxiliary report including my "Goals" and the names of chairmen who will be instrumental in achieving them.

During the question period an alert councilman noted the absence of a chairman for Goal #6; "Nurture a very caring and supportive attitude towards each other." At that time I dismissed his inquiry as satirical but now, reflecting, I realize he had a most valid point. If there were a Membership, Legislative, AMA-ERF and Health Chairman, why not a Nurturing Chairman?

I want to take this opportunity to appoint every physician's spouse to this chairmanship! **Doctors! — IMMEDIATELY** contact your spouse alerting them to this **Very Important Position** and the responsibilities it implies. With your expertise in nurturing your patients you can act as a catalyst and standard for your spouse by displaying a very caring and supportive attitude toward your family. This could prove to have a monumental snowball effect. It could be the most impressive, biggest, lasting Christmas gift we could give each other.

For you and yours I wish the meaning of your Christmas to be deeper, filled with the company of family and good friends, warmth of goodwill and special memories.

Shirley Ryan

Shirley Ryan, President
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Robert McWhirter, M.D., a board certified orthopedic surgeon, has set up his practice in Mitchell. Dr. McWhirter came to Mitchell from Menomonee Falls, Wisc. where he has been in private practice. Dr. McWhirter received his medical degree from the Medical College of Wisconsin in 1972 and interned at the Boston Univ., 1972-1973. He completed an orthopedic residency program at the Univ. of Massachusetts in Worcester in 1977. He spent three years at the Naval Regional Medical Center at Newport, R.I. serving as staff orthopedist.

* * * *

Dr. Kevin Bjordahl, family practice, recently began his practice in Webster. He is a native of South Dakota born in Lake Preston. He received his medical degree from USD School of Medicine and he completed a three year family practice residency in Sioux City, Iowa prior to moving to Webster.

Dr. Bjordahl and his wife, Mary, have three children.

* * * *

General practitioner, **Dr. Stephan Grant,** has begun his practice in Bowdle in the new medical clinic. Dr. Grant, a native of New Jersey, came here from Phoenix, Ariz. where he has recently completed an internship. He received his medical degree from Georgetown Univ. School of Medicine, Washington, DC in 1984.

In his leisure time, Dr. Grant enjoys running. He completed and finished well in the Boston Marathon this year.

* * * *

Malini Sridharan, M.D., family practitioner, has joined the Faulkton Clinic, Faulkton. She was born in Mysore, India and received her medical degree from the Mysore Medical College in 1972. She completed a rotating internship in India and also at the Univ. of Manitoba in Canada. Dr. Sridharan practiced in Canada from 1980 to the present, before coming to Faulkton.

Dr. Sridharan and her husband, Sid, have two boys. The new Faulkton physician enjoys all types of music.

* * * *

David Wachs, M.D., a native of Aberdeen, has joined the Family Health Center in Aberdeen. Dr. Wachs, family practice, received his medical degree from USD School of Medicine in 1981. He completed his residency at the Univ. of North Dakota in Bismarck in 1985. He is certified in family practice and has been practicing in Wayne, Neb. before coming to South Dakota.

Dr. Wachs and his wife, Marilyn, have four children.

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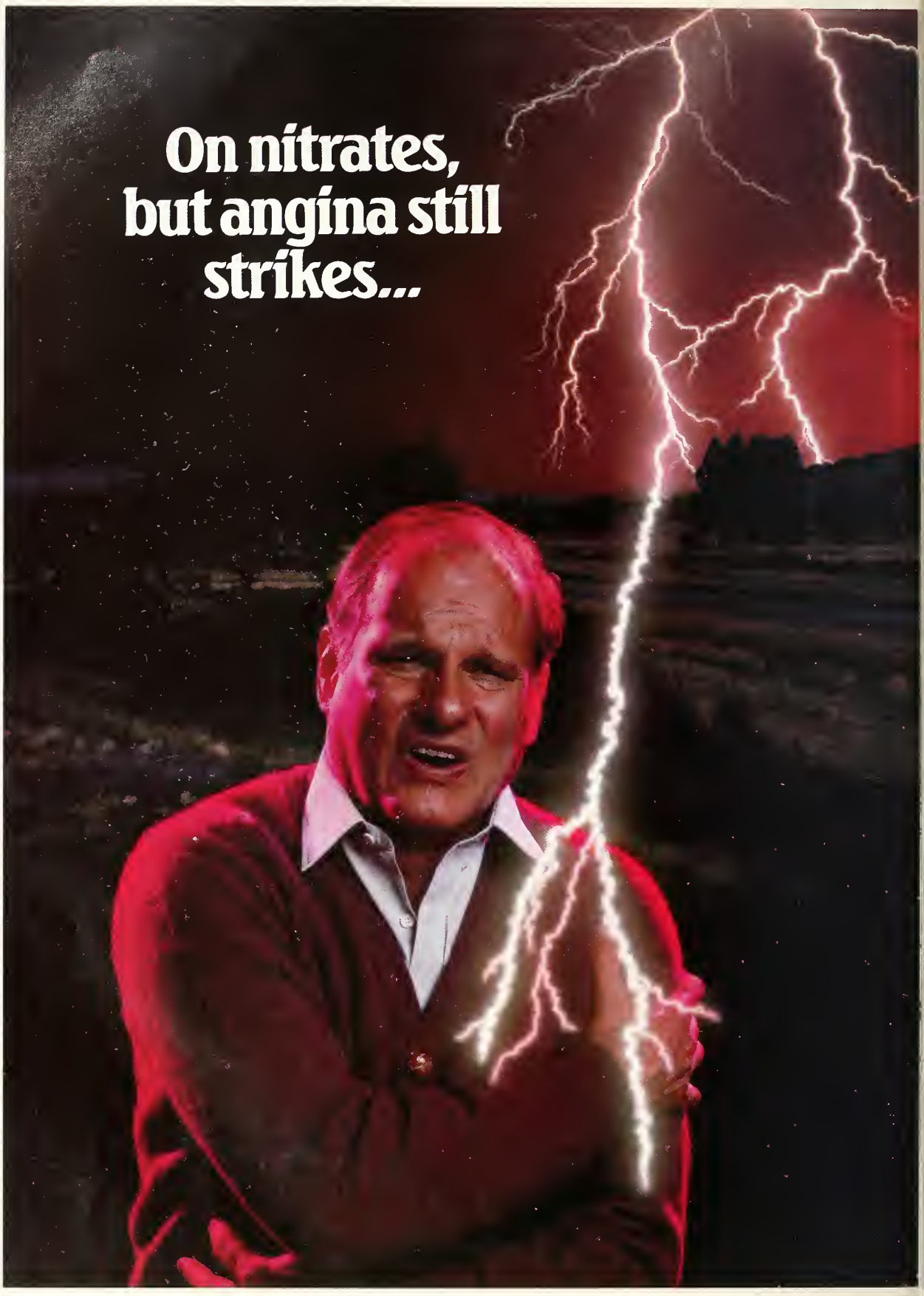
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Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. 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(See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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Council Meeting Highlights

The Council of the South Dakota State Medical Association met on Friday, September 27, 1985, in Sioux Falls, South Dakota. Following are items of business transacted at this meeting:

1. SIOUX FALLS DISTRICT SEATS SIXTH COUNCILOR. James Reynolds, M.D. was elected as the sixth councilor from the Sioux Falls District Medical Society. Rodney Parry, M.D. was elected alternate councilor.
2. PROFESSIONAL LIABILITY LEGISLATIVE PACKAGE. The Council approved four pieces of legislation relating to professional liability and directed that bills be drafted and submitted to the 1986 legislative session. These bills include: 1) mandatory offset on collateral sources, 2) mandatory periodic payments or structured settlements, 3) a $500,000 cap on all damages, and 4) elimination of punitive damage awards.
3. ASSOCIATION ENDORSEMENT OF SERVICES. Action was taken to discontinue allowing I.C. Systems to use the SDSMA name in solicitations to S.D. doctors, and not to endorse or lend the SDSMA name to any collection service at this time.
4. ANNUAL MEETING PROGRAM. The Council accepted the recommendation of the Commission on Scientific Medicine to have a socio-economic program rather than scientific sessions for the 1986 meeting. This session will be on Tax Aspects of Financial Planning put on by the Tax Reduction Institute.
5. ANNUAL MEETING SITE. A survey of all SDSMA members was taken to determine if a majority wanted to include Aberdeen on the rotation for annual meetings along with Sioux Falls and Rapid City. The vote was 222 for and 242 against, and the Council voted to continue the rotation between Sioux Falls and Rapid City only, for the time being.
6. HONORARY LIFE MEMBERS. The following physicians were elected to honorary life member status in the South Dakota State Medical Association: Robert Delaney, M.D., Mitchell; Glen Heidepriem, M.D., Rapid City; Robert Branch, M.D., Rapid City; J. A. Zanka, M.D., Rapid City; C. J. Clark, M.D., Watertown; Theodore Hohm, M.D., Huron; John Rodine, M.D., Aberdeen; and William Sweeny, M.D., Aberdeen.
7. SODAPAC BOARD OF DIRECTORS. The following physicians and spouses were elected to serve on the SoDaPAC Board of Directors: Thomas Huber, M.D., Pierre; J. Geoffrey Slingsby, M.D., Rapid City; Mrs. Annette Shousha, Britton; Mrs. Ruby Mutch, Sioux Falls; Mrs. Connie Benson, Sioux Falls; Mrs. Marilyn Alvine, Sioux Falls; Mrs. Ruth Parry, Sioux Falls; Mrs. Shirley Ryan, Sioux Falls; Mrs. Karen Pekas, Sious Falls; and Mrs. Kay Berg, Winner.
8. HMO TRADE NAME AND LOGO. The Council adopted the trade name of DAKOTACARE for the South Dakota Physicians Health Group and the logo, "The Health Plan of the South Dakota State Medical Association."

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Future Meetings

January

2nd Annual Educational Symposium — Breast Reconstruction, St. Joseph's Hospital, Atlanta, GA, Jan. 24-26. Fee: $450. 16.5 hrs. AMA Category I credit. Contact: SESPRS, Breast Reconstruction Symp., John Hartley, Jr., M.D., 3280 Howell Mill Rd., #111, Atlanta, GA 30327.

Advanced Cardiac Life Support Provider Course, Francisco Lounge, U. of Kans., Kansas City, KS, Jan. 29-30. Fee: $200. 13.5 AMA Category I & AAFP credit. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

Use of the CO_2 Laser in ENT Surgery Workshop, Sudler Hall, U. of Kans., Kansas City, KS, Jan. 30-Feb. 3. Fee: $900. 15 hrs. AMA Category I credit. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

Practical Solutions to Problems in Burn Care, Holiday Inn Surfside, Clearwater, FL, Jan. 30-Feb. 1. Fee: $275. 16 hrs. AMA Category I credit. Contact: U. of S. Florida, Coll. of Med., Off. of CME, 12901 N. 30th St., Tampa, FL 33612.

February

Symposium on Cataracts, Sheraton Hotel, New Orleans, LA, Feb. 14-15. Fee: $200. 14 hrs. AMA Category I credit. Contact: Kenneth Haik, M.D., Symp. Dir., The Eye Found. of Am., 823 Maison Blanche Bldg., New Orleans, LA 70112. Phone: (504)581-3714.

Strategies in Onocology and Hematology for the Family Practitioner, Saddlebrook Resort, Tampa, FL, Feb. 17-22. Fee: $275. Contact: Marge Adey, U. of Neb. Med. Ctr., Ctr. for Cont. Educ., 42nd & Dewey Ave., Omaha, NE 68105. Phone: (402)559-4152.

Current Concepts in Perinatal Medicine, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Feb. 20-21. 13 hrs. AMA Category I credit. Contact: Charles W. Drage, M.D., Dir., CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

5th Annual Big Sky Pulmonary/Ski Conference, Big Sky Resort, Big Sky of Mont., Feb. 20-22. Fee: $125. CME credits applied for. Contact: ALA of Montana, 825 Helena Ave., Helena, MT 59601. Phone: (406)442-6556.

March

Medical Ethics, Battenfeld Aud., U. of Kans., March 7. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 29th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

Annual Postgraduate Pediatrics Symposium, Battenfeld Aud., U. of Kans., Mar. 12-13. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

Advanced Cardiac Life Support Provider Course, Francisco Lounge, U. of Kan., Mar. 19-20. Fee $200. 13.5 hrs. AMA Category 1 & AAFP credit. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

Sam E. Roberts Nutrition Symposium, Battenfeld Aud., U. of Kans., Mar. 25. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

AIDS: Are You At Risk? Battenfeld Aud., U. of Kans., Mar. 28. Contact: Carole Rosen, Promo. Coor., Off. of Cont. Educ., U. of Kans. Med. Ctr., 39th & Rainbow Blvd., Kansas City, KS 66103. Phone: (913)588-4480.

April

Pulmonary Function Testing Workshop, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Apr. 2-4. 18-23 hrs. AMA Category I credit. Contact: Charles W. Drage, M.D., Dir. CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

Gynecology Update, St. Paul-Ramsey Med. Ctr., St. Paul, MN, Apr. 10-11. 14 hrs. AMA Category I credit. Contact: Charles W. Drage, M.D., Dir. CME, St. Paul-Ramsey Med. Ctr., 640 Jackson St., St. Paul, MN 55101. Phone: (612)221-3992.

The Cutting Edge 1986-Master Clinicians At Work: How Psychotherapy Heals, Hotel Inter-Continental, San Diego, CA, Apr. 19-20. Fee: $275. 13 hrs. AMA Category I credit. Contact: Off. of CME, UC San Diego Scl. of Med., M-017, La Jolla, CA 92093. Phone: (619)452-3940.

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